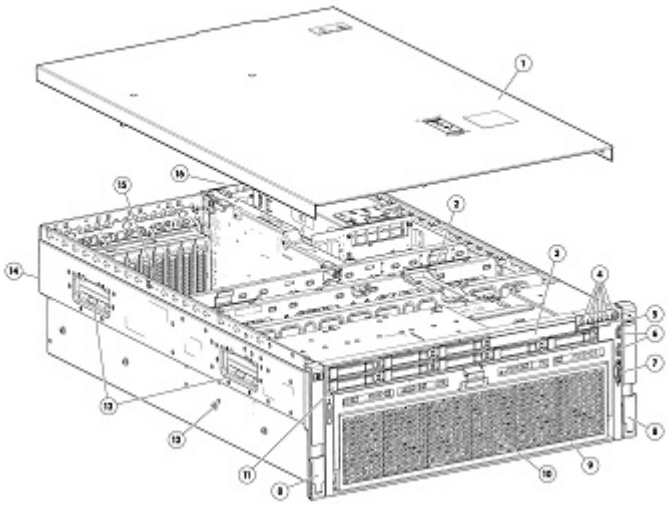
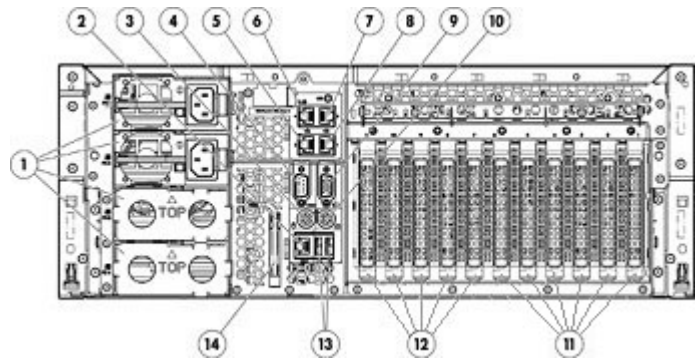
Overview

Traditionally, mission-critical RAS (Reliability, Availability and Serviceability) features have been associated with RISC (Reduced Instruction Set Computing) systems. HP has designed an eco-system of RAS functionalities that has raised the bar for the HP ProLiant DL580 G7. The HP ProLiant DL580 G7 continues to deliver best-in-class HP performance, manageability, and reliability features with the latest Intel processor technology and it is the ideal choice for customers that are ready to deploy Large Databases that require scale-up compute processing, large memory and I/O intensive applications.





Front View:

1. Quick Removal Access Panel
2. 4 Hot Plug Redundant Fans Standard on all models
3. HP Slim SATA DVD ROM Optical Drive
4. Front Panel LED Display and Power Button
5. Slide-out Systems Insight Display
6. Two front accessible USB 2.0 ports
7. One front video port
8. Quick release levers for fast server access
9. Front accessible Processor and memory drawer
10. Support for up to four Intel® Xeon® Processors
11. Support for up to 8 Small Form-Factor (SFF) SAS, Serial ATA (SATA) or SSD drives
12. Universal Tool-less "Snap In" Sliding Rail Solution
13. Server Lifting Handles
14. 4U (7" Height) Rack Form Factor
15. Up to 11 slots supported; all full-length/full-height

Rear View:

1. Hot Plug Redundant Power Supplies (2 or 4 depending on the model)
2. Integrated Lights-Out 3 port
3. Mouse port
4. Serial Port
5. Gigabit NIC Ports
6. Gigabit NIC Ports
7. Gigabit NIC Ports
8. Gigabit NIC Ports
9. Video Port
10. Keyboard port
11. PCI-Express or PCI-X option (slots 1-6)
12. PCI-Express slots (slots 7-11)
13. Two USB ports
14. Service tool

What's New

- Flexible technologies provide customer choice in networking with either a Broadcom or Qlogic solution.

Standard Features

NOTE: For the Standard Features shipped in the "Factory Integrated Models", please see the "Configuration Information - Factory Integrated Models" section.

Processor One or more of the following depending on model	**Ten-Core Processors** Intel® Xeon® E7-4870 (2.40GHz/10-core/30MB/130W) Processor Intel® Xeon® E7-4860 (2.26GHz/10-core/24MB/130W) Processor Intel® Xeon® E7-4850 (2.00GHz/10-core/24MB/130W) Processor Intel® Xeon® E7-8867L (2.13GHz/10-core/30MB/105W) Processor **Eight-Core Processors** Intel® Xeon® E7-8837 (2.67GHz/8-core/24MB/130W) Processor Intel® Xeon® E7-4830 (2.13GHz/8-core/24MB/105W) Processor Intel® Xeon® E7-4820 (2.0GHz/8-core/18MB/105W) Processor Intel® Xeon® X7560 (2.26GHz/8-core/24MB/130W) Processor Intel® Xeon® X7550 (2.0GHz/8-core/18MB/130W) Processor Intel® Xeon® L7555 (1.86GHz/8-core/24MB/95W) Processor **Six-Core Processors** Intel® Xeon® E7-4807 (1.86GHz/6-core/18MB/95W) Processor Intel® Xeon® E7540 (2.0GHz/6-core/18MB/105W) Processor Intel® Xeon® E7530 (1.86GHz/6-core/12MB/105W) Processor Intel® Xeon® X7542 (2.66GHz/6-core/18MB/130W) Processor **Quad-Core Processors** Intel® Xeon® E7520 (1.86GHz/4-core/18MB/95W) Processor **NOTE:** New Intel Microarchitecture with Intel Virtualization Technology FlexMigration. Industry Standard Intel® 7500 Chipset with four high-speed interconnects up to 6.4GT/s.
Cache Memory One of the following depending on model	30MB (1 x 30MB) Level 3 cache **NOTE:** For E7-8867L and E7-4870 Processors 24MB (1 x 24MB) Level 3 cache **NOTE:** For E7-8837, E7-4860, E7-4850, E7-4830, X7560, and L7555 Processors. 18MB (1 x 18MB) Level 3 cache **NOTE:** For E7-4820, E7-4807, X7550, E7540, X7542, and E7520 Processors. 12MB (1 x 12MB) Level 3 cache **NOTE:** For E7530 Processor.
Chipset	Industry Standard Intel® 7500 Chipset **NOTE:** For more information regarding Intel chipsets, please see the following URL: http://www.intel.com/products/server/chipsets/
Upgradeability	Upgradeable to quad (4) processors

Standard Features

Memory Protection	Advanced ECC Double Data Device Correction - DDDC **NOTE:** Intel® Xeon® Processor E7 series powered only. Mirrored Memory Online Spare Memory

Memory One of the following depending on Model	Type	PC3-10600R DIMMs (DDR3)
	Standard (2P Models)	16GB (4 x 4GB)
	Standard (4P Model - E7540)	32GB (8 x 4GB)
	Standard (4P Models - X7560, X7550)	64GB (16 x 4GB)
	Standard (2P Models - E7-4830, E7-4807)	64 (8 x 8GB)
	Standard (4P Models - E7-4870, E7-4850)	128GB (16 x 8GB)
	Maximum	2TB (64 x 32GB)* * Intel® Xeon® Processor E7 series powered only, 1TB max on 7500 series

Network Controller One of the following depending on Model	HP NC375i Integrated Quad Port Gigabit Server Adapter **NOTE:** Optional Dual Port 10GbE upgrade (replaces two 1G ports) HP Ethernet 1Gb 4-port 331i-SPI Adapter

Expansion Slots

NOTE: Up to 11 slots supported; all full-length/full-height. Standard: 2 PCI-E 2.0 x8, 3 PCI-E 2.0 x4.

NOTE: The primary video controller needs to be located in the Main I/O board slots 7-11 providing video during boot. A video controller installed in an I/O expansion slot 1-6 cannot be the primary controller. It will not have video during boot but will provide video once OS and drives load.

Expansion Slots (Main IO Board standard)	Expansion Slot #	Technology	Width	Connector Width*	Bus / Dev Number**	Form Factor	Notes
	1	N/A	N/A	N/A	N/A	N/A	N/A
	2	N/A	N/A	N/A	N/A	N/A	N/A
	3	N/A	N/A	N/A	N/A	N/A	N/A
	4	N/A	N/A	N/A	N/A	N/A	
	5	N/A	N/A	N/A	N/A	N/A	
	6	N/A	N/A	N/A	N/A	N/A	

Standard Features

	7	PCI Express Gen2	x4	x8	0/0A	FH/FL
	8	PCI Express Gen2	x4	x8	0/09	FH/FL
	9	PCI Express Gen2	x8	x16	0/07	FH/FL
	10	PCI Express Gen2	x4	x8	0/01	FH/FL
	11	PCI Express Gen2	x8	x16	0/05	FH/FL

* Default bus assignment. Inserting cards with PCI bridges may alter the actual bus assignment number.
** Slots are enumerated differently based on OS. MS OS's enumerate from lowest to highest Device ID by bus (starting with the lowest bus).
FL= Full length; FH = Full height; LP = low-profile.

Expansion Slots

Expansion Slots with IO Expander (combination PCI-X, PCI-e and 300W GPU	Expansion Slot #	Technology	Width	Connector Width*	Bus / Dev Number**	Form Factor	Notes
	1	PCI-X	64-bit	N/A	82/01	FH/FL	100MHz
	2	PCI-X	64-bit	N/A	82/02	FH/FL	100MHz
	3	PCI Express Gen2	x16	x16	80/07	FH/FL	
	4	PCI Express Gen2	x4	x8	80/01	FH/FL	
	5	N/A	N/A	N/A	N/A	N/A	N/A
	6	PCI Express Gen2	x16	x16	80/03	FH/FL	
	7	PCI Express Gen2	x4	x8	0/0A	FH/FL	
	8	PCI Express Gen2	x4	x8	0/09	FH/FL	
	9	PCI Express Gen2	x8	x16	0/07	FH/FL	
	10	PCI Express Gen2	x4	x8	0/01	FH/FL	
	11	PCI Express Gen2	x8	x16	0/05	FH/FL	

* Default bus assignment. Inserting cards with PCI bridges may alter the actual bus assignment number.
** Slots are enumerated differently based on OS. MS OS's enumerate from lowest to highest Device ID by bus (starting with the lowest bus).
FL= Full length; FH = Full height; LP = low-profile.

Standard Features

Expansion Slots

Expansion Slots with I/O Expander (standard PCI-e option)	Expansion Slot #	Technology	Width	Connector Width*	Bus / Dev Number**	Form Factor	Notes
	1	PCI Express Gen1	x4	x8	80/00	FH/FL	
	2	PCI Express Gen2	x8	x16	80/09	FH/FL	
	3	PCI Express Gen2	x8	x16	80/07	FH/FL	
	4	PCI Express Gen2	x4	x8	80/01	FH/FL	
	5	PCI Express Gen2	x8	x16	80/05	FH/FL	
	6	PCI Express Gen2	x8	x16	80/03	FH/FL	
	7	PCI Express Gen2	x4	x8	0/0A	FH/FL	
	8	PCI Express Gen2	x4	x8	0/09	FH/FL	
	9	PCI Express Gen2	x8	x16	0/07	FH/FL	
	10	PCI Express Gen2	x4	x8	0/01	FH/FL	
	11	PCI Express Gen2	x8	x16	0/05	FH/FL	

* Default bus assignment. Inserting cards with PCI bridges may alter the actual bus assignment number.
** Slots are enumerated differently based on OS. MS OS's enumerate from lowest to highest Device ID by bus (starting with the lowest bus).
FL= Full length; FH = Full height; LP = low-profile.

Storage Controller
One of the following depending on Model

Base Models HP Smart Array P410i/512 MB FBWC Controller
High Performance Models HP Smart Array P410i/1G FBWC Controller

The Flash Backed Write Cache (FBWC) increases cache data retention capabilities from two days of existing battery backed write cache (BBWC) to infinite data retention.

- Standard on all Models
- Transportable data protection
- Increases overall controller performance

Standard Features

Internal Storage Devices	Diskette Drive	None
	Optional Optical Drive	HP Slim SATA DVD ROM Optical Drive **NOTE:** Standard on Xeon Processor 7500 series models
	Hard Drives	None ship standard
	Hard Disk Drive Backplane	Internal SAS backplane supports up to eight SFF hard disk drives

Maximum Internal Storage	Hot Plug SFF SAS	8.0TB	8 x 1TB
	Hot Plug SFF SATA	8.0TB	8 x 1TB
	Hot Plug SFF SSD	960GB	8 x 120GB
	Hot Plug SFF SAS SSD	6.4TB	8 x 800GB
	Hot Plug SFF SATA SSD	3.2TB	8 x 400GB
	NOTE: There is an extra internal SSD slot available as well.		

Interfaces	Serial	1
	Video	1 front; 1 rear
	Network RJ-45	4
	iLO 3 Remote Management	1
	Keyboard	1
	Pointing Device (Mouse)	1
	SD Slot	1
	USB 2.0 Ports	6 total: 2 front; 2 rear; 2 internal

Industry Standard Compliance	ACPI 2.0. Compliant
	PCIE 2.0 Compliant
	PXE Support
	WOL Support
	Physical Address Extension (PAE) Support
	Microsoft® Logo certifications
	USB 2.0 Support

Server Power Cords	**NOTE:** If customers require a local power cord, they can check the power cord matrix for the appropriate county specific sku. Please see the following power cord matrix for details: http://www.hp.com/go/powercordmatrix

Standard Features

Power Supply One of the following depending on Model	HP 1200W Common Slot Platinum Hot Plug Power Supply Kit **NOTE:** Supported on the E7-4870, E7-4850, E7-4830 and E7-4807 Models HP 1200W Common Slot Silver Hot Plug Power Supply Kit **NOTE:** Supported on the X7560, X7550, E7540, E7530, E7520 Models **NOTE:** Two Hot Plug Power Supplies ship standard with 2P Models. Four Hot Plug Power Supplies ship standard with 4P Models. Power Supply Requirement Override **NOTE:** The HP ProLiant DL580 G7 does an inventory of the system configuration to determine what level of redundancy the power supply configuration supports based on some configuration assumptions. The level of redundancy will be reported during the system power on. For planning purposes you can use the Power Advisor (www.hp.com/go/proliant-energy-efficient or www.hp.com/go/hppoweradvisor) which is more accurate to determine the power requirements. Also, there is an RBSU override switch capability that allows the user to override the base setting if the Power Advisor indicates redundancy with their configuration.
System Fans	Four Hot Plug redundant fans standard (3+1)
Operating Systems and Virtualization Software Support for ProLiant Servers	Microsoft Windows Server Red Hat Enterprise Linux (RHEL) SUSE Linux Enterprise Server (SLES) Oracle Solaris VMware Citrix XenServer **NOTE:** For more information on HP's Certified and Supported ProLiant Servers for OS and Virtualization Software and latest listing of software drivers available for your server, please visit our Support Matrix at: http://www.hp.com/go/ossupport and our driver download page http://www.hp.com/support/DL580G7
Graphics	Integrated ATI ES1000 with 64MB embedded video SDRAM Max Resolution 1280 x 1024 x 16M color
Form Factor	Rack (4U = 7 inches), ships with Quick Deploy Sliding Rail System, an ambidextrous cable management arm and quick release levers for fast and easy serviceability and in-rack tool-less access to major components. Space saving form factor (4U) provides space efficiencies while providing maximum deployment flexibility.

HP Insight Management	HP Service Pack for ProLiant	HP Service Pack for ProLiant (SPP) and HP Smart Update Manager (HP SUM) version 5 provide a new, comprehensive approach to firmware and system software maintenance. Together they provide better operating stability and ensure maximum uptime. The SPP will be updated at a predictable cadence, typically coinciding with new HP server hardware launches. By enabling firmware to be updated online and integrating firmware and system software updates in one operation HP SUM and the SPP offer faster updates of individual servers and dramatically faster updates of entire BladeSystem enclosures. Further improving system uptime and stability is the fact that HP provides 12 months of support on each Service Pack for ProLiant.

	The user experience around HP SUM and the SPP has been improved in several ways, starting with the web download. A single web page provides access to a single download containing both the latest version of HP SUM version 5 and the latest SPP. Optional smaller subsets with only specific types of servers or specific operating systems are offered to save on download time. The HP SUM application has been re-written to provide a more straightforward, intuitive user interface that guides the user through the steps of discovery, analyses and update, providing comprehensive information on available updates, criticality and interdependencies. This information is also available in reports. By providing the option of multiple local or shared repositories which can be easily updated from hp.com, HP SUM provides the tools to optimize stability and consistency throughout the company. While HP SUM and the SPP will recommend the combinations of firmware and system software that HP has found to be the best practice, the application gives customers the flexibility to set their own specific baseline. The Service Pack for ProLiant has been rigorously tested with specific attention for interaction between firmware, drivers and agents both within the server as well as in interaction with the BladeSystem enclosure components (Onboard Administrator and Virtual Connect). This testing ensures the highest quality as well as providing the input for HP SUM to deploy updates taking into account all interdepencies, when determining the correct updates and order of update deployment. The Service Pack for ProLiant (which includes HP SUM 5) can be downloaded from: www.hp.com/go/spp/download. More information can be found: http://www.hp.com/go/spp and http://www.hp.com/go/hpsum
HP Insight Foundation	Insight Foundation is being baselined at version v8.70 which means the following: ● Its Media Kit (contains 2 SmartStart CDs, the Firmware DVD, and the Management DVD) will continue to ship with all supported ProLiant G7 or earlier BTO servers until the last supported server is no longer shipping. ● The Media Kit will not be updated past version 8.70. ● ProLiant G7 or earlier CTO servers are able to order the Media Kit with the understanding that the media is not updated. Please check specific server QuickSpecs for availability of CTO Kit. ● PSP and Firmware DVD downloads will be updated through 2Q 2012 at the HP Insight Foundation Suite for ProLiant downloads tab: http://www.hp.com/go/foundation Customers are urged to use the replacement product, HP Service Pack for ProLiant, instead of Insight Foundation Suite which is found at these location: www.hp.com/go/spp www.hp.com/go/spp/download
HP Integrated Lights-Out (iLO)	HP Integrated Lights-Out (iLO) simplifies server setup, health monitoring, power and thermal control, and lights-out remote administration of ProLiant ML, DL, and BL servers. HP iLO functions without additional software and can be accessed from any location via a web browser. HP iLO works hand-in-hand with HP Systems Insight Manager, Insight Control and Insight Dynamics for ProLiant, helping customers unleash the value of the ProLiant platform and

deliver the highest possible quality of IT service. For more information, visit: www.hp.com/go/iLO

Intelligent Manageability	HP Systems Insight Manager SmartStart Redundant ROM Remote Flash ROM Management Agents Integrated Management Log (IML) Automatic Server Recovery-2 (ASR-2) ROM-Based Setup Utility (RBSU) Dynamic Sector Repairing (with Smart Array Controllers) Drive Parameter Tracking (with Smart Array Controllers) Pre-Failure Warranty (covers processors, SAS hard drives and memory) Redundant/adaptive load balancing NIC Support Hot Spare Boot **NOTE:** Upon the event of a failed processor in a multi-processing environment, the system will automatically reboot and use the remaining good processor(s).
HP Insight Online	HP Insight Online is a new capability available through the HP Support Center portal for one stop, secure access to product and HP support information specific to your IT environment. Insight Online can automatically display devices remotely monitored by HP Insight Remote Support. With Insight Online's easy navigation you can efficiently track your IT support contracts and device status from anywhere and at anytime. www.hp.com/go/insightonline
Security	Power-on password Keyboard password External USB port enable/disable Network Server Mode Serial interface control Administrator's password Removable optical drive

Standard Features

Warranty

This product is covered by a global limited warranty and supported by HP Services and a worldwide network of HP Authorized Channel Partners resellers. Hardware diagnostic support and repair is available for three years from date of purchase. Support for software and initial setup is available for 90 days from date of purchase. Enhancements to warranty services are available through HP Care Pack services or customized service agreements. Hard drives have either a one year or three year warranty; refer to the specific hard drive QuickSpecs for details.

NOTE: Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response. Warranty repairs may be accomplished through the use of Customer Self Repair (CSR) parts. These parts fall into two categories: 1) Mandatory CSR parts are designed for easy replacement. A travel and labor charge will result when customers decline to replace a Mandatory CSR part; 2) Optional CSR parts are also designed for easy replacement but may involve added complexity. Customers may choose to have HP replace Optional CSR parts at no charge. Additional information regarding worldwide limited warranty and technical support is available at:
http://h18004.www1.hp.com/products/servers/platforms/warranty/index.html

Optional Features

HP Insight management	HP Insight Control	HP Insight Control, a product option, delivers essential infrastructure management that can help save time and money by making it easy to deploy, migrate, monitor, remote control, and optimize your IT infrastructure through a single, simple management console. Two versions of Insight Control are available, to serve environments requiring either a Linux-based or a Windows-based central management server: HP Insight Control for Linux, and HP Insight Control. See www.hp.com/go/insightcontrol HP Insight Control includes one year of 24 x 7 HP Software Technical Support and Update Service ensuring rapid access to HP support staff and proactive delivery of software updates. For more information about this service, please visit: http://www.hp.com/services/insight.
	HP Insight Dynamics for ProLiant	HP Insight Dynamics for ProLiant, a product option, is an integrated command center that enables IT Staff personnel to continuously analyze and optimize a converged infrastructure, while automating and reducing the cost of common data center tasks by as much as 40 percent. As a powerfully integrated by design toolkit to accelerate complex technology projects and simplify daily operations that ultimately enable IT Staff personnel to dynamically keep pace with the organizations changing business requirements. It enables them to plan capacity and power continuously, balance across physical and virtual resources, and ensure cost-effective high availability. It also enables IT organizations to provision infrastructure consistently and automatically from pools of shared resources using a self-service portal. Resources provisioned can range from a single virtual machine to complex multi-tier environments and their associated physical and virtual resource requirements. In addition to the previous functional benefits, it also provides a cost-effective disaster recovery for physical and virtual environments that works with HP Continuous Access software for both the Enterprise Virtual Array and the XP storage array allowing application environments to be reactivated in minutes with the touch of a button to a remote location. **NOTE:** For more information, visit: http://www.hp.com/go/insightdynamics

Optional Features

Solutions

The ProLiant DL580 G7 server is an enterprise class, 4 socket server designed for maximum scalability and high availability. Its innovative chassis offers unsurpassed flexibility and serviceability in a versatile form factor. Based upon the latest industry standard processing, memory, I/O and networking technologies, the ProLiant DL580 G7 provides the highest levels of performance demanded by today's compute intensive applications. Unparalleled high availability features, including hot-plug and redundant components, guarantee maximum uptime. HP Integrated Lights-Out 3 (iLO3) technology allows remote administration from a standard web browser without ever having to visit the server. Within the 4U dense form factor, it's highly expandable architecture provides maximum application deployment flexibility with the ability to add PCI-Express, PCI-X, 2 - 10GB NICs and battery-backed write cache options. Innovative features, such as the ability to access processors, memory, hard drives, and power supplies while the unit remains secured in the rack, enable rapid response to service events, radically decreasing overall IT costs and server downtime.

Typical Usage:
Space-constrained corporate data centers and service providers
Network and I/O expandability, inbuilt availability and reliability features, advanced power management capabilities and large internal storage make DL580 G7 ideal for corporate datacenters.

Database, Messaging and Business Applications
Large internal storage, refined I/O slots options, high network bandwidth, new DDR3 expandable memory combined with latest Intel 8-core expandable processors in DL580 G7 provide everything necessary for today's database, messaging and business applications.

Virtualization and Consolidation
HP's 4S architecture, inbuilt advanced reliability and scalability features make DL580 G7 a perfect platform for virtualization and consolidation solutions. HP's Insight control offerings make it easy to manage, deploy and migrate virtualized servers with VMware or Microsoft® Virtual Server. For more solutions visit: http://www.hp.com/solutions/proliantdl580.

High Performance Clusters	HP Cluster Platforms	HP Cluster Platforms are specifically engineered, factory-integrated large-scale ProLiant clusters optimized for High Performance Computing, with a choice of servers, networks and software. Operating system options include specially priced offerings for Red Hat Enterprise Linux and SUSE Linux Enterprise Server, as well as Microsoft Windows HPC Server. A Cluster Platform Configurator simplifies ordering. http://www.hp.com/go/clusters
	HP HPC Interconnects	High Performance Computing (HPC) interconnect technologies are available for this server as part of the HP Cluster Platform portfolio. These high-speed InfiniBand and Gigabit interconnects are fully supported by HP when integrated within an HP cluster. Flexible, validated solutions can be defined with the help of configuration tools. http://www.hp.com/techservers/clusters/ucp/index.html
	HP Cluster Management Utility	HP Cluster Management Utility (CMU) is an HP-licensed and HP-supported suite of tools that are used to manage large-scale Linux ProLiant systems. CMU includes software for the centralized provisioning, management and monitoring of nodes. CMU makes the administration of clusters user friendly, efficient, and effective. http://www.hp.com/go/cmu
	HP HPC Linux Value Pack	HP HPC Linux Value Pack (Value Pack) is an HP-licensed and HP-supported specially priced software bundle for the development and deployment of applications on HPC Cluster Platforms. Value Pack includes the Platform HPC

Enterprise Edition suite of tools including the LSF workload scheduler, the HP-MPI parallelization library. Also included are the HP Unified Parallel C compiler and the HP Shmem library, as well as the execution environments for the libraries and compiler. HP HPC Linux Value Pack

Factory Express Portfolio for Servers and Storage

HP Factory Express offers configuration, customization, integration and deployment services for HP servers and storage products. Customers can choose how their factory solutions are built, tested, integrated, shipped and deployed.

Factory Express offers service packages for simple configuration, racking, installation, complex configuration and design services as well as individual factory services, such as image loading, asset tagging, and custom packaging. HP products supported through Factory Express include a wide array of servers and storage: HP Integrity, HP ProLiant, HP ProLiant Server Blades, HP BladeSystem, HP 9000 servers as well as the MSAxxxx, VA7xxx, EVA, XP, rackable tape libraries and configurable network switches.

For more information on Factory Express services for your specific server model please contact your sales representative or go to: http://www.hp.com/go/factory-express.

HP Simple Configurator

SCE is a guided self service tool to help sales and non technical people provide customers with initial configurations in 3 to 5 minutes. You may then send the configuration on for configuration help, or use in your existing ordering processes. If you require "custom" rack configuration or configuration for products not available in SCE, please contact HP's Customer Business Center or an Authorized Partner for assistance. http://www.hp.com/products/configurator

Service and Support

Service and Support

HP Technology Services for Industry Standard Servers and BladeSystem
Capitalizing on HP ProLiant server and HP BladeSystem capabilities requires a service partner who understands your increasingly complex business technology environment. That's why it makes sense to team up with the people who know HP infrastructure hardware and software best - the experienced professionals at HP Services.

What HP ProLiant and BladeSystem Services can do for you
HP ProLiant and BladeSystem Services can help you design, deploy, test, integrate, support, and manage IT and infrastructure solutions. This way, HP proposes services solutions that include more than just uplift of base warranty. You can get the support you need by choosing from one of a number of service packaged solutions we have designed to address wider set of customer support needs:.

HP Technology Services meets business challenges with services offered in three packages - **Optimized Care Package, Standard Care Package, and Basic Care Package** - available for each product group. Such packaged solutions enable customers to optimize technology operations, minimize risk and drive better business outcomes with easy-to-buy, easy-to-use scalable support packages for servers, storage, networking and software.

Optimized Care Package

Supports maintaining servers at optimum performance availability

HP ProLiant Server Hardware Installation
Provides for the basic hardware installation of HP branded servers, storage devices and networking options to assist you in bringing your new hardware into operation in a timely and professional manner
http://h20195.www2.hp.com/V2/GetPDF.aspx/5981-9356EN

HP Installation and Startup for SIM (Systems Insight Manager)
Provides for installation and configuration of the latest version of HP Systems Insight Manager, together with the installation and startup of HP Service Essentials Remote Support Pack
http://h20195.www2.hp.com/v2/GetPDF.aspx/5982-4143EN.pdf

3-Year HP Critical Advantage
Provides end-to-end infrastructure support solution for business critical applications running on virtualized/x86 infrastructures, enabling the customers to cost effectively build, operate, and continuously improve their IT environment
http://h20195.www2.hp.com/V2/GetDocument.aspx?docname=4AA3-1772ENW

Additional Services: Microsoft or Linux or VMware education courses + Facility & technology environmental assessment services + Energy Efficiency Design, Factory Express

Standard Care Package

Package that maintains high level of server availability

HP ProLiant Server Hardware Installation
Provides for the basic hardware installation of HP branded servers, storage devices and networking options to assist you in bringing your new hardware into operation in a timely and professional manner
http://h20195.www2.hp.com/V2/GetPDF.aspx/5981-9356EN

HP Installation and Startup for SIM (Systems Insight Manager)
Provides for installation and configuration of the latest version of HP Systems Insight Manager, together with the installation and startup of HP Service Essentials Remote Support Pack
http://h20195.www2.hp.com/v2/GetPDF.aspx/5982-4143EN.pdf

Service and Support

	3-Year HP 6 hour Hardware Support Onsite Call-to-Repair Service Provides an IT manager with a team of support specialists who will quickly begin troubleshooting the system to help return the hardware to operating condition within 6 hours of the initial service request to the HP Global Solution Center http://h20195.www2.hp.com/V2/GetPDF.aspx/5982-6547EN.pdf **3-Year , HP 24x7 Software Support for Insight Control** Provides for the deployment and basic configuration of HP Insight Control on HP ProLiant ML and DL series servers or HP BladeSystem servers http://h20195.www2.hp.com/V2/GetPDF.aspx/5981-6645EEE.pdf **Additional Services**: Software OS (Microsoft, Linux (SUSE/Red Hat) & VMware Installation & Start Up, and Software Support; Install and Startup Services for Insight Control; Microsoft or Linux or VMware education courses; +30 Proactive Select Credits, Factory Express
Basic Care Package	**Basic Care Package: delivers minimum recommended support service level** **HP ProLiant Server Hardware Installation** Provides for the basic hardware installation of HP branded servers, storage devices and networking options to assist you in bringing your new hardware into operation in a timely and professional manner http://h20195.www2.hp.com/V2/GetPDF.aspx/5981-9356EN **3-Year HP 24x7 4 hour Response, Hardware Support Onsite Service** Provides for the deployment and basic configuration of HP Insight Control on HP ProLiant ML and DL series servers or HP BladeSystem servers http://h20195.www2.hp.com/v2/GetPDF.aspx/4AA0-9972ENW.pdf **Additional Services**: Software OS (Microsoft, Linux (SUSE/Red Hat) & VMware Installation & Start Up and Software Support); +10 Proactive Select Credits, Factory Express
Insight Remote Support	The packages include HP Insight Remote Support that uses proven technology to deliver secure, reliable 24x7 remote monitoring, diagnoses, and problem resolution. It is available at no additional cost to all warranty, HP Care Pack Service, and service agreement customers.
For more information	To learn more on HP ProLiant servers and HP BladeSystem servers, please contact your HP sales representative or HP Authorized Channel Partner. Or visit: http://www.hp.com/services/proliant

Pre-configured Models

NOTE: For the Standard Features shipped in the "Factory Integrated Models", please see the "Configuration Information - Factory Integrated Models" section.
NOTE: Pre-configured models ship with the configurations below. Options can be selected from the Core or Additional options section of this QuickSpecs.
NOTE: HP does not allow factory integration of options into pre-configured models. Any additional options purchased will be shipped separately.
NOTE: If you desire a custom configuration please see "Configuration Information - Factory Integrated Models" section of this QuickSpecs.
NOTE: Not all models are available in all regions. Check with your local country HP offices for availability.

High Performance Models

HP ProLiant DL580 G7 E7-4870 4P 128GB-R P410i/1G FBWC 4x1200W HE PS Server 643063-xx1 **HP ProLiant DL580 G7 E7-4850 4P 128GB-R P410i/1G FBWC 4x1200W HE PS Server** 643064-xx1 **HP ProLiant DL580 G7 E7-4870 4P 128GB-R Hot Plug SAS SFF BC NIC 1200W PS Server** 696729-xx1 **HP ProLiant DL580 G7 E7-4850 4P 128GB-R Hot Plug SAS SFF BC NIC 1200W PS Server** 696730-xx1	**Processor(s)** Four of the following depending on model	(4) Intel® Xeon® E7-4870 (2.40GHz/10-core/30MB/130W) Processors (4) Intel® Xeon® E7-4850 (2.00GHz/10-core/24MB/130W) Processors (4) Intel® Xeon® X7560 (2.26GHz/8-core/24MB/130W) Processors (4) Intel® Xeon® X7550 (2.0GHz/8-core/18MB/130W) Processors (4) Intel® Xeon® E7540 (2.0GHz/6-core/18MB/105W) Processors
	Cache Memory One of the following depending on model	30MB (1 x 30MB) Level 3 cache 24MB (1 x 24MB) Level 3 cache 18MB (1 x 18MB) Level 3 cache
	Memory One of the following depending on model	128GB (16 x 8GB DIMMs) PC3-10600R DIMMs (DDR3) installed in (8) (E7) Memory Cartridges (E7-4870, E7-4850 Models) 64GB (16 x 4GB DIMMs) PC3-10600R DIMMs (DDR3) installed in (8) memory boards (X7560, X7550 Models) 32GB (8 x 4GB DIMMs) PC3-10600R DIMMs (DDR3) installed in (4) memory boards (E7540 Models)
	Network Controller One of the following depending on model	HP NC375i Integrated Quad Port Gigabit Server Adapter HP Ethernet 1Gb 4-port 331i-SPI Adapter
	Storage Controller	Embedded HP Smart Array P410i/1G FBWC Controller
	Hard Drives	None ship standard
	Internal Storage	Up to 8.0TB of internal storage (SFF SAS)
	Optical Drive	HP Slim SATA DVD ROM Optical Drive
	Power Supply One of the following depending on model	(4) HP 1200W Common Slot Platinum Hot Plug Power Supply Kit (E7-4870, E7-4850 Models) (4) HP 1200W Common Slot Silver Hot Plug Power Supply Kit (X7560, X7550, E7540 Models)
	Fans	Four Hot Plug redundant fans standard (3+1)
	Integrated Lights Out	Integrated Lights-Out 3 (iLO 3) ships standard
	Insight Control	HP Insight Control No Media single server license, including 1 year of 24x7 Technical Support and Updates
	Form Factor	Rack 4U
	Warranty	Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response

Pre-configured Models

Base Models

HP ProLiant DL580 G7 E7-4830 2P 64GB-R P410i/512 FBWC 2x1200W HE PS Server 643065-xx1	**Processor(s)** Two of the following depending on model Up to 4 supported	(2) Intel® Xeon® E7-4830 (2.13GHz/8-core/24MB/105W) Processors (2) Intel® Xeon® E7-4807 (1.86GHz/6-core/18MB/95W) Processors (2) Intel® Xeon® E7530 (1.86GHz/6-core/12MB/105W) Processors (2) Intel® Xeon® E7520 (1.86GHz/4-core/18MB/95W) Processors
	Cache Memory One of the following depending on model	24MB (1 x 24MB) Level 3 cache 18MB (1 x 18MB) Level 3 cache 12MB (1 x 12MB) Level 3 cache
HP ProLiant DL580 G7 E7-4807 2P 64GB-R P410i/512 FBWC 2x1200W HE PS Server 643066-xx1	**Memory**	64GB (8 x 8GB DIMMs) PC3-10600R DIMMs (DDR3) installed in (4) (E7) Memory Cartridges (E7-4830, E7-4807 Models) 16GB (4 x 4GB DIMMs) PC3-10600R DIMMs (DDR3) installed in (2) memory boards (E7530, E7520 Models)
HP ProLiant DL580 G7 E7-4830 2P 64GB-R Hot Plug SAS SFF BC NIC 1200W PS Server 696731-xx1	**Network Controller** One of the following depending on model	HP NC375i Integrated Quad Port Gigabit Server Adapter HP Ethernet 1Gb 4-port 331i-SPI Adapter
	Storage Controller	Embedded HP Smart Array P410i/512 MB FBWC Controller
	Hard Drives	None ship standard
	Internal Storage	Up to 8.0TB of internal storage (SFF SAS)
HP ProLiant DL580 G7 E7-4807 2P 64GB-R Hot Plug SAS SFF BC NIC 1200W PS Server 696732-xx1	**Optical Drive**	HP Slim SATA DVD ROM Optical Drive
	Power Supply One of the following depending on model	(2) HP 1200W Common Slot Platinum Hot Plug Power Supply Kit (E7-4830, E7-4807 Models) (2) HP 1200W Common Slot Silver Hot Plug Power Supply Kit (E7530, E7520 Models)
	Fans	Four Hot Plug redundant fans standard (3+1)
	Integrated Lights Out	Integrated Lights-Out 3 (iLO 3) ships standard
	Form Factor	Rack 4U
	Warranty	Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response

Country Code Key	xx = 00	US
	xx = 20	Brazil
	xx = 29	Japan
	xx = 37	APD
	xx = 42	Europe
	xx = AA	PRC

NOTE: This section lists some of the steps required to configure a Factory Integrated Model. To ensure only valid configurations are ordered, HP recommends the use of an HP approved configurator. Contact your local sales representative for information on configurable product offerings and requirements.
NOTE: Factory Integrated Models must start with a CTO Server
NOTE: FIO indicates that this option is only available as a factory installable option.

Step 1: Base Configuration

HP Models

HP ProLiant DL580 G7 (E7) Configure-to-order Server 643086-B21

Factory Integrated Models ship with:

HP NC375i Integrated Quad Port Gigabit Server Adapter
Four HP DL580G7/DL980 G7 (E7) Memory Cartridges
Five standard PCI-express slots
HP Smart Array P410i/ Zero Memory Controller
Four redundant hot-plug fans
SFF SAS/SATA/SSD drive cage
HP Integrated Lights-Out 3 (iLO 3) management processor: integrated on system board
Rack (4U), 7-inch
NOTE: Power supplies need to be selected separately from Step 2 below.
NOTE: Customers purchasing the Intel® Xeon® Processor E7 series will need to purchase the HP DL580R07 (E7) CTO Server (PN 643086-B21)

HP ProLiant DL580 G7 (E7) BC NIC Configure-to-order Server 643086-B22

Factory Integrated Models ship with:

HP Ethernet 1Gb 4-port 331i-SPI Adapter
Four HP DL580G7/DL980 G7 (E7) Memory Cartridges
Five standard PCI-express slots
HP Smart Array P410i/ Zero Memory Controller
Four redundant hot-plug fans
SFF SAS/SATA/SSD drive cage
HP Integrated Lights-Out 3 (iLO 3) management processor: integrated on system board
Rack (4U), 7-inch
NOTE: Power supplies need to be selected separately from Step 2 below.
NOTE: Customers purchasing the Intel® Xeon® Processor E7 series will need to purchase the HP DL580R07 (E7) CTO Server (PN 643086-B22)

Step 2: Choose Required Options (only one of the following from each list unless otherwise noted)

HP Processors

NOTE: If more than two processors are desired, select one xxxxxx-L21 and additional processors would be xxxxxx-B21. 3P configurations are not supported.

Ten-Core Processors

HP DL580 G7 Intel® Xeon® E7-4870 (2.40GHz/10-core/30MB/130W) FIO 2-processor Kit 643067-L21
NOTE: QPI speed is 6.40 GT/s

HP DL580 G7 Intel® Xeon® E7-4860 (2.26GHz/10-core/24MB/130W) FIO 2-processor Kit 643069-L21
NOTE: QPI speed is 6.40 GT/s

HP DL580 G7 Intel® Xeon® E7-4850 (2.00GHz/10-core/24MB/130W) FIO 2-processor Kit 643071-L21
NOTE: QPI speed is 6.40 GT/s

	HP DL580 G7 Intel® Xeon® E7-8867L (2.13GHz/10-core/30MB/105W) FIO 2-processor Kit **NOTE:** QPI speed is 6.40 GT/s	643079-L21
	Eight-Core Processors	
	HP DL580 G7 Intel® Xeon® E7-8837 (2.67GHz/8-core/24MB/130W) FIO 2-processor Kit **NOTE:** QPI speed is 6.40 GT/s	643081-L21
	HP DL580 G7 Intel® Xeon® E7-4830 (2.13GHz/8-core/24MB/105W) FIO 2-processor Kit **NOTE:** QPI speed is 6.40 GT/s	643073-L21
	HP DL580 G7 Intel® Xeon® E7-4820 (2.0GHz/8-core/18MB/105W) FIO 2-processor Kit **NOTE:** QPI speed is 5.86 GT/s	643075-L21
	Six-Core Processors	
	HP DL580 G7 Intel® Xeon® E7-4807 (1.86GHz/6-core/18MB/95W) FIO 2-processor Kit **NOTE:** QPI speed is 4.80 GT/s	643077-L21
	NOTE: Intel® Xeon® Processor E7-4800 series processors are supported only in the HP ProLiant DL580 G7 (E7) Configure-to-order Server (PN 643086-B21) and E7 series pre-configured models)	
HP Memory	**Registered DIMMs (RDIMMs)**	
	HP 2GB (1x2GB) Dual Rank x8 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit **NOTE:** Only supported with the Intel® Xeon® Processor 7500 series processors	500656-B21
	HP 4GB (1x4GB) Dual Rank x4 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	500658-B21
	HP 4GB (1x4GB) Single Rank x4 PC3L-10600 (DDR3-1333) Registered CAS-9 Low Power Memory Kit	604504-B21
	HP 8GB (1x8GB) Dual Rank x4 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	500662-B21
	HP 8GB (1x8GB) Dual Rank x4 PC3L-10600 (DDR3-1333) Registered CAS-9 Low Power Memory Kit	604506-B21
	HP 16GB (1x16GB) Quad Rank x4 PC3-8500 (DDR3-1066) Registered CAS-7 Memory Kit	500666-B21
	HP 16GB (1x16GB) Dual Rank x4 PC3L-10600 (DDR3-1333) Registered CAS-9 LP Memory Kit	627812-B21
	HP 32GB (1x32GB) Quad Rank x4 PC3L-8500 (DDR3-1066) Registered CAS-7 LP Memory Kit **NOTE:** PC3L DIMMs are only supported with the Intel® Xeon® Processor E7 series processors and require (E7) memory cartridge. **NOTE:** PC3L is a low-voltage memory.	627814-B21
	Memory Expansion Options	
	HP DL580G7/DL980G7 (E7) Memory Cartridge **NOTE:** Four memory cartridges come standard in the HP ProLiant DL580 G7 (E7) Configure-to-order Server (643086-B21), each kit contains one cartridge and a maximum of (8) are supported in the server. See Memory Performance Optimization in the Memory section for configuration guidelines.	644172-B21
	HP DL580G7/DL980G7 Memory Cartridge **NOTE:** Each kit contains one memory board and a maximum of (8) are supported in the server. See Memory Performance Optimization in the Memory section for configuration guidelines.	588141-B21
HP Power Supplies	**NOTE:** Prior to making a power supply selection it is highly recommended that the HP Power Advisor is run to determine the right size power supply for your server	

	configuration. The HP Power Advisor is located at: www.hp.com/go/hppoweradvisor.	
	HP 1200W Common Slot Silver Hot Plug Power Supply Kit	500172-B21
	HP 1200W Common Slot Platinum Hot Plug Power Supply Kit	578322-B21
	NOTE: All power supplies in a server should match. Mixing Platinum and Silver Power Supplies is not supported. **NOTE:** Option Kits contain optional power supply, an IEC power cable and PDU IEC cables.	

Step 3: Choose Additional Factory Integratable Options

HP Insight Software	HP Insight Control including 1yr 24x7 Support ProLiant ML/DL/BL-bundle Single Server FIO License	582765-B21
	HP Insight Control for Linux including 1yr 24x7 Support ML/DL Bundle 1 Server FIO License	TC203A

Step 4: Choose Additional Options for Factory Integration

NOTE: For additional options, please refer to the "Core Options" and "Additional Options" section below.

Core Options

NOTE: Some options may not be integrated at the factory. To ensure only valid configurations are ordered, HP recommends the use of an HP approved configurator. Contact your local sales representative for additional information.

HP Unique Options	HP DL580 G7 PCI Express Kit **NOTE:** Adds four PCI-E 2.0 x8, one PCI-E 2.0 x4 and one PCI-E 1.1 x4.	588137-B21
	HP DL580 G7 PCI-X Combo Express Kit **NOTE:** Adds two PCI-E 2.0 x16, one PCI-E 2.0 x4 and two PCI-X.	588139-B21
	HP DL580G7/DL980G7 (E7) Memory Cartridge **NOTE:** Four memory cartridges come standard in the HP ProLiant DL580 G7 (E7) Configure-to-order Server (643086-B21), each kit contains one cartridge and a maximum of (8) are supported in the server. See Memory Performance Optimization in the Memory section for configuration guidelines.	644172-B21
	HP DL580G7/DL980G7 Memory Cartridge **NOTE:** Each kit contains one memory board and a maximum of (8) are supported in the server. See Memory Performance Optimization in the Memory section for configuration guidelines.	588141-B21
HP Processors	**Ten-Core Processors**	
	HP DL580 G7 Intel® Xeon® E7-4870 (2.40GHz/10-core/30MB/130W) Processor Kit **NOTE:** QPI speed is 6.40 GT/s	643067-B21
	HP DL580 G7 Intel® Xeon® E7-4860 (2.26GHz/10-core/24MB/130W) Processor Kit **NOTE:** QPI speed is 6.40 GT/s	643069-B21
	HP DL580 G7 Intel® Xeon® E7-4850 (2.00GHz/10-core/24MB/130W) Processor Kit **NOTE:** QPI speed is 6.40 GT/s	643071-B21
	HP DL580 G7 Intel® Xeon® E7-8867L (2.13GHz/10-core/30MB/105W) Processor Kit **NOTE:** QPI speed is 6.40 GT/s	643079-B21
	Eight-Core Processors	
	HP DL580 G7 Intel® Xeon® E7-8837 (2.67GHz/8-core/24MB/130W) Processor Kit **NOTE:** QPI speed is 6.40 GT/s	643081-B21
	HP DL580 G7 Intel® Xeon® E7-4830 (2.13GHz/8-core/24MB/105W) Processor Kit **NOTE:** QPI speed is 6.40 GT/s	643073-B21
	HP DL580 G7 Intel® Xeon® E7-4820 (2.0GHz/8-core/18MB/105W) Processor Kit **NOTE:** QPI speed is 5.86 GT/s	643075-B21
	HP DL580 G7 Intel® Xeon® X7560 (2.26GHz/8-core/24MB/130W) Processor Kit **NOTE:** QPI speed is 6.40 GT/s	588143-B21
	HP DL580 G7 Intel® Xeon® X7550 (2.0GHz/8-core/18MB/130W) Processor Kit **NOTE:** QPI speed is 6.40 GT/s	588145-B21
	HP DL580 G7 Intel® Xeon® L7555 (1.86GHz/8-core/24MB/95W) Processor Kit **NOTE:** QPI speed is 5.86 GT/s	588154-B21
	Six-Core Processors	
	HP DL580 G7 Intel® Xeon® E7-4807 (1.86GHz/6-core/18MB/95W) Processor Kit **NOTE:** QPI speed is 4.80 GT/s	643077-B21
	HP DL580 G7 Intel® Xeon® E7540 (2.0GHz/6-core/18MB/105W) Processor Kit **NOTE:** QPI speed is 6.40 GT/s	588150-B21

Core Options

	HP DL580 G7 Intel® Xeon® E7530 (1.86GHz/6-core/12MB/105W) Processor Kit **NOTE:** QPI speed is 5.86 GT/s	588152-B21
	HP DL580 G7 Intel® Xeon® X7542 (2.66GHz/6-core/18MB/130W) Processor Kit **NOTE:** QPI speed is 5.86 GT/s	588156-B21
	Quad-Core Processors	
	HP DL580 G7 Intel® Xeon® E7520 (1.86GHz/4-core/18MB/95W) Processor Kit **NOTE:** QPI speed is 4.80 GT/s	595245-B21
	NOTE: Above processor kits contain one processor each. **NOTE:** Intel® Xeon® Processor E7-4800 series processors only supported in the HP ProLiant DL580 G7 (E7) Configure-to-order Server (PN 643086-B21) and E7 series pre-configured models)	
HP Memory	**Registered DIMMs (RDIMMs)**	
	HP 2GB (1x2GB) Dual Rank x8 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit **NOTE:** Only supported with the Intel® Xeon® Processor 7500 series processors.	500656-B21
	HP 4GB (1x4GB) Dual Rank x4 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	500658-B21
	HP 4GB (1x4GB) Single Rank x4 PC3L-10600 (DDR3-1333) Registered CAS-9 Low Power Memory Kit	604504-B21
	HP 8GB (1x8GB) Dual Rank x4 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	500662-B21
	HP 8GB (1x8GB) Dual Rank x4 PC3L-10600 (DDR3-1333) Registered CAS-9 Low Power Memory Kit	604506-B21
	HP 16GB (1x16GB) Quad Rank x4 PC3-8500 (DDR3-1066) Registered CAS-7 Memory Kit	500666-B21
	HP 16GB (1x16GB) Dual Rank x4 PC3L-10600 (DDR3-1333) Registered CAS-9 LP Memory Kit	627812-B21
	HP 32GB (1x32GB) Quad Rank x4 PC3L-8500 (DDR3-1066) Registered CAS-7 LP Memory Kit **NOTE:** PC3L DIMMs are only supported with the Intel® Xeon® Processor E7 series processors and require (E7) memory cartridge. **NOTE:** PC3L is a low-voltage memory.	627814-B21
	Memory Expansion Options	
	HP DL580G7/DL980G7 (E7) Memory Cartridge **NOTE:** Four memory cartridges come standard in the HP ProLiant DL580 G7 (E7) Configure-to-order Server (643086-B21), each kit contains one cartridge and a maximum of (8) are supported in the server. See Memory Performance Optimization in the Memory section for configuration guidelines.	644172-B21
	HP DL580G7/DL980G7 Memory Cartridge **NOTE:** Each kit contains one memory board and a maximum of (8) are supported in the server. See Memory Performance Optimization in the Memory section for configuration guidelines.	588141-B21

Core Options

HP Optical Drives	**NOTE:** Optical drives are ejectable.	
	HP Slim 12.7mm SATA DVD-RW Optical Drive	481043-B21
	HP Slim 12.7mm SATA DVD-ROM Optical Drive	481041-B21
HP Hard Drives	**NOTE:** The components of a storage subsystem (e.g. the drive, the HBA/controller, firmware, and the server backplane) should operate at the same data transfer rate or the system bandwidth will be negotiated down to an acceptable level for all components.	
	NOTE: Hard drives have either a one year or three year warranty; refer to the specific hard drive QuickSpecs for details.	
	SAS Hot Plug SFF (2.5-inch) Enterprise (ENT) Drives	
	HP 900GB 6G SAS 10K rpm SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	619291-B21
	HP 600GB 6G SAS 10K rpm SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	581286-B21
	HP 450GB 6G SAS 10K rpm SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	581284-B21
	HP 300GB 6G SAS 10K rpm SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	507127-B21
	HP 300GB 6G SAS 15K rpm SFF (2.5-inch) Hot Plug Enterprise 3 yr Warranty Hard Drive	627117-B21
	HP 146GB 6G SAS 15K rpm SFF (2.5-inch) Dual Port Enterprise 3yr Warranty Hard Drive	512547-B21
	SAS Hot Plug SFF (2.5-inch) Midline (MDL) Drives	
	HP 1TB 6G SAS 7.2K rpm SFF (2.5-inch) Dual Port Midline 1yr Warranty Hard Drive	605835-B21
	HP 500GB 6G SAS 7.2K rpm SFF (2.5-inch) Dual Port Midline 1yr Warranty Hard Drive	507610-B21
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18004.www1.hp.com/products/quickspecs/12244_div/12244_div.html (Worldwide)	
	SATA Hot Plug SFF (2.5-inch) Midline (MDL) Drives	
	HP 1TB 3G SATA 7.2K rpm SFF (2.5-inch) Hot Plug Midline 1yr Warranty Hard Drive	625609-B21
	HP 500GB 3G SATA 7.2K rpm SFF (2.5-inch) Midline 1yr Warranty Hard Drive	507750-B21
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/13121_div/13121_div.html (Worldwide)	
	SATA Hot Plug 2.5" Enterprise Mainstream Solid State Drives	
	HP 400GB 3G SATA MLC SFF (2.5-inch) Enterprise Mainstream 3yr Warranty Solid State Drive	636597-B21
	HP 200GB 3G SATA MLC SFF (2.5-inch) Enterprise Mainstream 3yr Warranty Solid State Drive	636595-B21
	HP 100GB 3G SATA MLC SFF (2.5-inch) Enterprise Mainstream 3yr Warranty Solid State Drive	636593-B21
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/13021_div/13021_div.html (Worldwide)	
	NOTE: Cable is not included for Non-hot plug Drives. SSD cable option kit sku: 661778-B21	

	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/14038_div/14038_div.html (Worldwide)	
	6G SAS Hot Plug Enterprise Performance Solid State Drives	
	HP 400GB 6G SAS SLC SFF (2.5-inch) Enterprise Performance 3yr Warranty Solid State Drive	632494-B21
	HP 200GB 6G SAS SLC SFF (2.5-inch) Enterprise Performance 3yr Warranty Solid State Drive	632492-B21
	6G SAS Hot Plug Enterprise Mainstream Solid State Drives	
	HP 800GB 6G SAS MLC SFF (2.5-inch) Enterprise Mainstream 3yr Warranty Solid State Drive	632506-B21
	HP 400GB 6G SAS MLC SFF (2.5-inch) Enterprise Mainstream 3yr Warranty Solid State Drive	632504-B21
	HP 200GB 6G SAS MLC SFF (2.5-inch) Enterprise Mainstream 3yr Warranty Solid State Drive	632502-B21
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/14038_div/14038_div.html (Worldwide)	
	Hard Drive Cables	
	HP DL580/DL585/DL980 G7 SSD Cable Kit	661778-B21
HP Networking	**Gigabit Ethernet Adapters**	
	HP NC112T PCI Express Gigabit Server Adapter	503746-B21
	HP NC360T PCI-E Dual Port Gigabit Server Adapter	412648-B21
	HP NC364T PCI-E Quad Port Gigabit Server Adapter	435508-B21
	HP NC365T 4-port Ethernet Server Adapter	593722-B21
	HP NC373F PCI-E Multifunction 1000SX Gigabit Svr Adapter	394793-B21
	HP NC373T PCI-E Multifunction Gigabit Server Adapter	394791-B21
	HP NC375T PCI Express Quad Port Gigabit Server Adapter	538696-B21
	HP NC382T PCI Express Dual Port Multifunction Gigabit Server Adapter	458492-B21
	HP Ethernet 1Gb 4-port 331T Adapter	647594-B21
	HP Ethernet 1Gb 2-port 332T Adapter	615732-B21
	HP Ethernet 1Gb 2-port 361T Adapter	652497-B21
	10 Gigabit Ethernet Adapters **NOTE:** A minimum of two Gigabytes (2 GB) of server memory is required per each adapter. **NOTE:** Direct Attach Cable (DAC) for copper environments or fiber transceivers and cables for fiber-optic environments must be purchased separately.	
	HP NC522SFP Dual Port 10GbE Gigabit Server Adapter	468332-B21
	HP NC524SFP Dual Port 10GbE Module	489892-B21
	HP NC523SFP 10Gb 2-port Server Adapter	593717-B21

Core Options

	HP NC550SFP Dual Port 10GbE Server Adapter	581201-B21
	HP NC552SFP 10Gb 2-port Ethernet Server Adapter	614203-B21
	HP 10 GbE PCI-e G2 Dual Port Network Interface Card	516937-B21
	HP Ethernet 10Gb 2-port 530SFP Adapter	652503-B21
	HP Ethernet 10Gb 2-port 560SFP+ Adapter	665249-B21
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: www.hp.com/go/ProLiantNICs	
HP InfiniBand	QLogic InfiniBand 4X QDR PCI-E G2 Dual Port HCA	583211-B21
	HP InfiniBand 4X QDR ConnectX-2 PCIe G2 Dual Port HCA	592520-B21
	HP InfiniBand 4X DDR ConnectX-2 PCIe G2 Dual Port HCA	592521-B21
	HP InfiniBand 4X DDR PCI-E 0 Memory Dual Port HCA	483513-B21
	HP InfiniBand FDR/EN 10/40Gb Dual Port 544QSFP Adapter	649281-B21
HP I/O Expansion Options	HP DL580 G7 PCI Express Kit	588137-B21
	NOTE: Adds four PCI-E 2.0 x8, one PCI-E 2.0 x4 and one PCI-E 1.1 x4.	
	HP DL580 G7 PCI-X Combo Express Kit	588139-B21
	NOTE: Adds two PCI-E 2.0 x16, one PCI-E 2.0 x4 and two PCI-X Suggested Slot placement: 1. Slot 3 PCIe2 x 16 (16,8,4,2,1) 2. Slot 6 PCIe2 x 16 (16,8,4,2,1) 3. Slot 9 PCIe2 x 16 (8,4,2,1) 4. Slot 11 PCIe2 x 16 (8,4,2,1) **NOTE:** Slot 9 and 11 are physically a x16 slot but will operate electrically at x8.	
HP Power Supplies	**NOTE:** Prior to making a power supply selection it is highly recommended that the HP Power Advisor is run to determine the right size power supply for your server configuration. The HP Power Advisor is located at: www.hp.com/go/hppoweradvisor.	
	HP 1200W Common Slot Silver Hot Plug Power Supply Kit	500172-B21
	HP 1200W Common Slot Platinum Hot Plug Power Supply Kit	578322-B21
	NOTE: All power supplies in a server should match. Mixing Platinum and Silver Power Supplies is not supported. **NOTE:** Option Kits contain optional power supply, an IEC power cable and PDU IEC cables.	

Additional Options

NOTE: Some options may not be integrated at the factory. To ensure only valid configurations are ordered, HP recommends the use of an HP approved configurator. Contact your local sales representative for additional information.

HP Insight Software	**HP Insight Control**	
	HP Insight Control including 1yr 24x7 Technical Support and Updates Electronic License	T9074BAE
	HP Insight Control including 1yr 24x7 Support ProLiant ML/DL/BL-bundle Electronic License	TC278AAE
	HP Insight Control including 1yr 24x7 Technical Support and Updates Single Server License	452148-B22
	HP Insight Management Media Kit **NOTE:** HP Insight Management Media Kit contains DVDs without licenses. Contains HP Systems Insight Manager, HP Insight Control, HP Matrix Operating Environment, and Virtual Connect Enterprise Manager software. Uses an integrated installer to perform quick and accurate software installation and updates.	436222-B21
	NOTE: Electronic and Flexible-Quantity licenses can be used to purchase multiple licenses with a single activation key. **NOTE:** Customer will receive a license entitlement certificate. The license entitlement certificate must be redeemed online or via fax in order to obtain the license activation key(s). Includes one year of 24 x 7 HP Software Technical Support and Update Service. **NOTE:** Licenses ship without media. The HP Insight Control Media Kit can be ordered separately, or can be downloaded at: http://www.hp.com/go/insightupdates. **NOTE:** For additional license options please see the Insight Control QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/12631_div/12631_div.html	
	HP Insight Control for Linux	
	HP Insight Control for Linux w/1yr 24x7 Supp ML/DL/SL Bundle Electronic 1 Svr LTU	TC203AAE
	HP Insight Control for Linux including 1yr 24x7 Support Electronic License	TC213AAE
	HP Insight Control for Linux including 1yr 24x7 Support Single Server License	TC209A
	HP Insight Control for Linux Media Kit	TC208A
	NOTE: Licenses ship without media. The Media Kit for Insight Control for Linux can be ordered separately, or can be downloaded at: http://www.hp.com/go/ic-linux (click on Download button). **NOTE:** Customer will receive a license entitlement certificate, which must be redeemed online or via fax in order to obtain the license activation key(s). Includes one year of 24 x 7 HP Software Technical Support Service. **NOTE:** For additional License Kits, including electronic licensing options, please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/13019_div/13019_div.html	
	HP Integrated Lights-Out Advanced	
	HP iLO Advanced Pack Electronic License with 3yr 24x7 Tech Support and Updates	BD506AAE
	HP iLO Advanced 1 Server License with 3yr 24x7 Tech Support and Updates	BD505A
	HP iLO Advanced including 1yr 24x7 Technical Support and Updates Electronic License	TA850AAE
	HP iLO Advanced including 1yr 24x7 Technical Support and Updates Single Server License	512485-B21
	NOTE: This license allows 1 server to be deployed and managed via HP iLO Advanced. Customer will receive a printed license entitlement certificate via physical shipment. The license entitlement certificate must be redeemed online or via fax in order to obtain	

	the license activation key(s). Includes one year of 24 x 7 HP Software Technical Support Service **NOTE:** For additional license kits, including electronic delivery options, please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/12362_div/12362_div.html	
	HP Insight Control server deployment	
	HP Insight Control Server Deployment including 1yr 24x7 Support Electronic License	T9082AAE
	HP Insight Control Server Deployment including 1yr 24x7 Support Single Server License	452151-B21
	NOTE: Licenses ship without media. The Insight Control Media Kit can be ordered separately, or can be downloaded at: http://www.hp.com/go/insightupdates. **NOTE:** Customer will receive a license entitlement certificate, which must be redeemed online or via fax in order to obtain the license activation key(s). Includes one year of 24 x 7 HP Software Technical Support Service. **NOTE:** For additional license kits please see the Insight Control QuickSpecs at: http://h18004.www1.hp.com/products/quickspecs/12631_div/12631_div.html	
High Performance Clusters	**HP Cluster Management Utility**	
	HP Insight Cluster Management Utility 1yr 24x7 Flexible License **NOTE:** This part number can be used to purchase one certificate for multiple licenses with a single activation key. Each license is for one node (server). Customer will receive a printed end user license agreement and license entitlement certificate via physical shipment. The license entitlement certificate must be redeemed online in order to obtain a license key.	QL803B
	HP Insight Cluster Management Utility 3yr 24x7 Flexible License **NOTE:** These part numbers can be used to purchase one certificate for multiple licenses and support with a single activation key. Each license is for one node (server). Customer will receive a printed end user license agreement and license entitlement certificate via physical shipment. The license entitlement certificate must be redeemed online in order to obtain a license key. Customer also will receive a support agreement.	BD476A
	HP Insight Cluster Management Utility Media **NOTE:** For additional license kits please see the QuickSpecs at: http://h18004.www1.hp.com/products/quickspecs/12612_div/12612_div.html	BD477A
	HP HPC Linux Value Pack	
	HP High Performance Computing Linux Value Pack 1 Processor Flexible License **NOTE:** This part number can be used to purchase one certificate for multiple licenses with a single activation key. Each license is for one socket (a.k.a. processor). Customer will receive a printed end user license agreement and license entitlement certificate via physical shipment. The license entitlement certificate must be redeemed online in order to obtain a license key.	TC293B
	HP High Performance Computing Linux Value Pack Media Kit **NOTE:** This part number can be used to purchase media including software and documentation, which will be delivered to the customer. **NOTE:** For additional license kits please see the QuickSpecs at: http://h18004.www1.hp.com/products/quickspecs/13485_div/13485_div.html	TC294A

Additional Options

HP I/O Accelerator Options	**Second Generation Accelerators**	
	HP 365GB Multi Level Cell G2 PCIe ioDrive2 for ProLiant Servers	673642-B21
	HP 785GB Multi Level Cell G2 PCIe ioDrive2 for ProLiant Servers	673644-B21
	HP 1205GB Multi Level Cell G2 PCIe ioDrive2 for ProLiant Servers	673646-B21
	HP 2410GB Multi Level Cell G2 PCIe ioDrive2 Duo for ProLiant Servers	673648-B21
	First Generation Accelerators	
	HP 160GB Single Level Cell PCIe ioDrive for ProLiant Servers **NOTE:** A low-profile PCI bracket is included for use in low-profile slots.	600278-B21
	HP 320GB Multi Level Cell PCIe ioDrive for ProLiant Servers **NOTE:** A low-profile PCI bracket is included for use in low-profile slots.	600279-B21
	HP 320GB Single Level Cell PCIe ioDrive Duo for ProLiant Servers	600281-B21
	HP 640GB Multi Level Cell PCIe ioDrive Duo for ProLiant Servers	600282-B21
	HP 1.28TB Multi Level Cell PCIe ioDrive Duo for ProLiant Servers	641027-B21
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/13587_div/13587_div.html (Worldwide)	
HP Graphics Options	HP DL580/DL585/DL980 G7 Power Cable Kit **NOTE:** The HP ProLiant DL580 G7 can support up to 4 (225W) or 3(300W) Graphic Cards and/or GPGPU Accelerator Options (x16 PCIE add-in cards in slots 11 and 9 will down-train electrically to x8 PCIE which may result in reduced performance.) **NOTE:** An option kit will be required per Graphic Card and/or GPGPU Accelerator Options. **NOTE:** Depending on the number of GPGPUs required, customers will need to purchase the following I/O expansion boards: DL580G7 PCI-X / PCI Express I/O Exp. Kit: PN: 588139-B21 (Adds two PCI-E 2.0 x16, one PCI-E 2.0 x4 and two PCI-X).	631660-B21
HP Security	HP Trusted Platform Module Option **NOTE:** The TPM (Trusted Platform Module) is a microcontroller chip that can securely store artifacts used to authenticate the server platform. These artifacts can include passwords, certificates and encryption keys. Windows® BitLocker™ Drive Encryption (BitLocker) is a data protection feature available in Windows Server® 2008. BitLocker leverages the enhanced security capabilities of a Trusted Platform Module (TPM) version 1.2. The TPM works with BitLocker to help protect user data and to ensure that a server running Windows Server 2008 has not been tampered with while the system was offline. For more information about TPM, including a white paper, go to: www.hp.com/go/TPM. **NOTE:** ProLiant OS pre-installed units will come with the partition required for TPM deployment. **NOTE:** The TPM key is unique to every TPM deployed server and must be retained. Misplacing or losing the key could result in data loss.	488069-B21
HP Storage Controllers	**SAS Controllers**	

Additional Options

Smart Array P212 Controller	
HP Smart Array P212/ZM 1-ports Int/1-ports Ext PCIe x8 SAS Controller	462828-B21
HP Smart Array P212/256 1-ports Int/1-ports Ext PCIe x8 SAS Controller	462834-B21
Smart Array P410 Controller	
HP Smart Array P410/256 2-ports Int PCIe x8 SAS Controller	462862-B21
HP Smart Array P410/512 BBWC 2-ports Int PCIe x8 SAS Controller	462864-B21
HP Smart Array P410/512 FBWC 2-ports Int PCIe x8 SAS Controller	578230-B21
HP Smart Array P410/1G FBWC 2-ports Int PCIe x8 SAS Controller	572532-B21
Smart Array P411 Controller	
HP Smart Array P411/256 2-ports Ext PCIe x8 SAS Controller	462830-B21
HP Smart Array P411/512 BBWC 2-ports Ext PCIe x8 SAS Controller	462832-B21
HP Smart Array P411/1G FBWC 2-ports Ext PCIe x8 SAS Controller	572531-B21
HP Smart Array P411/512 FBWC 2-ports Ext PCIe x8 SAS Controller	578229-B21
Smart Array P812 Controller	
HP Smart Array P812/1G FBWC 2-ports Int/4-ports Ext PCIe x8 SAS Controller	487204-B21
Optional Upgrades	
HP 512MB P-Series Battery Backed Write Cache Upgrade **NOTE:** Supported on HP Smart Array P411 Controller only.	462967-B21
HP 1GB Flash Backed Cache	534562-B21
HP 512MB Flash Backed Write Cache	534916-B21
HP 256MB P-series Cache Upgrade	462968-B21
HP Smart Array Advanced Pack including 1yr 24x7 Technical Support and Updates Single Server License **NOTE:** This part number can be used to purchase a single license or to order multiple licenses with a single activation key. Customers will receive a license entitlement certificate via e-mail. The license entitlement certificate must be redeemed online or via fax in order to obtain the license activation key(s). Include one year of 24x7 HP Software Technical Support Services. **NOTE:** Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/13203_div/13203_div.html (Smart Array P212 Controller) http://h18000.www1.hp.com/products/quickspecs/13201_div/13201_div.html (Smart Array P410 Controller) http://h18000.www1.hp.com/products/quickspecs/13202_div/13202_div.html (Smart Array P411 Controller) http://h18000.www1.hp.com/products/quickspecs/13558_div/13558_div.html (Smart Array P812 Controller) http://h18000.www1.hp.com/products/quickspecs/13200_div/13200_div.html (Smart Array Advanced Pack)	516471-B21
SAS HBA	
HP Modular Smart Array SC08e 2-ports Ext PCIe x8 SAS Host Bus Adapter **NOTE:** This is a 2 x4 External Port HBA **NOTE:** This is only approved for the HP P2000 G3 SAS Modular Smart Array.	614988-B21

Additional Options

	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18004.www1.hp.com/products/quickspecs/13651_div/13651_div.html (SC08e 6Gb HBA)	
	SCSI HBA	
	HP SC11Xe Ultra320 Single Channel/ PCIe x4 SCSI Host Bus Adapter **NOTE:** Recommended HBA for SCSI tape drive connect.	412911-B21
	NOTE: Please see the following QuickSpecs for additional information: http://h18000.www1.hp.com/products/quickspecs/12566_div/12566_div.html (SC11Xe HBA)	
HP Power Cords	HP C13 - SEV 1011 CH 250V 10Amp 1.83m Power Cord	AF565A
	HP C13 - DK-2.5A DK 250V 10Amp 1.83m Power Cord	AF566A
	HP C13 - CEE-VII EU 250V 10Amp 1.83m Power Cord	AF568A
	HP C13 - BS-1363A UK/HK/SG 250V 10Amp 1.83m Power Cord	AF570A
	HP C13 - CEI-23-50 IT/CL 250V 10Amp 1.83m Power Cord	AF571A
	HP C13 - SABS-164 ZA 250V 10Amp 2.5m Power Cord	AF567A
HP Tape Backup	**NOTE:** For the complete range of tape drives, autoloaders, libraries and media see: http://www.hp.com/go/tape. For hardware and software compatibility of HP tape backup products see: http://www.hp.com/storage/SPOCK.	
	HP DAT 320 USB in 1U Rack-mount Kit	AP835B
	HP 1/8 G2 LTO-4 Ultrium 1760 SAS Tape Autoloader **NOTE:** Requires HP 1U Tape Autoloader Rack Kit (AH166A) for rack installation. Connection using HP P212 SAS Smart Array Controller (462828-B21) recommended.	AK377A
	HP DAT 320 SAS Internal Tape Drive **NOTE:** For installation into 1U SAS rack kit (AE459B) or 3U SAS rack kit (AG576B). No peripheral bay available for installation into the server. Connection using HP P212 Smart Array Controller SAS (462828-B21) recommended.	AJ830A
	HP Ultrium 920 SAS Internal Tape Drive **NOTE:** For installation into 1U SAS rack kit (AE459B) or 3U SAS rack kit (AG576B). No peripheral bay available for installation into the server. Connection using HP P212 Smart Array Controller SAS (462828-B21) recommended.	EH847B
	HP LTO-4 Ultrium 1840 SAS External Tape Drive	EH861B
	HP LTO-5 Ultrium 3280 SAS Internal Tape Drive **NOTE:** For installation into 3U SAS rack kit (AG576B). No peripheral bay available for installation into the server. Connection using HP P212 Smart Array Controller SAS (462828-B21) recommended.	EH899B
	HP 1/8 G2 LTO-5 Ultrium 3000 SAS Tape Autoloader **NOTE:** Requires HP 1U Tape Autoloader Rack Kit (AH166A) for rack installation. Connection using HP P212 Smart Array Controller SAS (462828-B21) recommended.	BL536A
	HP MSL2024 1 LTO-4 Ultrium 1760 SAS Tape Library	AK378A

Additional Options

	HP MSL2024 1 LTO-5 Ultrium 3000 SAS Tape Library **NOTE:** Connection using HP P212 Smart Array Controller SAS (462828-B21) recommended.	BL537A
	HP MSL4048 2 LTO-4 Ultrium 1760 SAS Tape Library	AK380A
	HP MSL4048 2 LTO-5 Ultrium 3000 SAS Tape Library **NOTE:** Connection using HP P212 Smart Array Controller SAS (462828-B21) recommended.	BL538A
	HP MSL8096 2 LTO-4 Ultrium 1760 SAS Tape Library	AK382A
	HP MSL8096 2 LTO-5 Ultrium 3000 SAS Tape Library **NOTE:** Connection using HP P212 Smart Array Controller SAS (462828-B21) recommended.	BL539A
HP Disk Backup	**NOTE:** For the complete range of D2D Backup Systems see: http://www.hp.com/go/d2d. For the complete range of RDX drives and media see: http://www.hp.com/go/rdx. For hardware and software compatibility of HP disk backup products see: http://www.hp.com/storage/SPOCK.	
	HP D2D Backup Systems with Backup Data Deduplication	
	HP D2D2504i Backup System **NOTE:** 3.0TB of useable network disk backup capacity. Network connected appliance with connectivity using the iSCSI protocol. If the server requires a hardware iSCSI initiator, the QLogic QLA4050 Host Bus Adapter is recommended.	EJ002B
	HP D2D2504i Backup System	EJ002C
	HP D2D4112 Backup System **NOTE:** 9.0TB (expandable to 18.0TB) of useable network disk backup capacity. Fibre Channel SAN connected appliance. Direct server attach is not supported, requires connection via SAN fabric.	EH993B
	HP D2D4112 Backup System	EH993C
	HP RDX Removable Disk Backup Systems USB	
	HP RDX500 Internal Removable Disk Backup System **NOTE:** For installation into 1U USB Rack-Mount Kit (A8007A). No peripheral bay available for drive installation into the server. 500GB of disk capacity per data cartridge.	AJ934A
	HP RDX1000 Internal Removable Disk Backup System **NOTE:** For installation into 1U USB Rack-Mount Kit (A8007A). No peripheral bay available for drive installation into the server. 1TB of disk capacity per data cartridge.	BV847A

Additional Options

HP Storage Options

Storage Fibre Channel HBA

NOTE: The following is a list of all Fibre Channel Host Bus Adapters for Windows and Linux. For detailed compatibility information please see: http://h18006.www1.hp.com/storage/saninfrastructure/hba.html

Brocade Fibre Channel HBAs

HP 81B 8Gb 1-port PCIe Fibre Channel Host Bus Adapter	AP769B
HP 82B 8Gb 2-port PCIe Fibre Channel Host Bus Adapter	AP770B
HP 41B 4Gb 1-port PCIe Fibre Channel Host Bus Adapter	AP767B
HP 42B 4Gb 2-port PCIe Fibre Channel Host Bus Adapter	AP768B

Emulex Fibre Channel HBAs

HP 81E 8Gb 1-port PCIe Fibre Channel Host Bus Adapter	AJ762B
HP 82E 8Gb 2-port PCIe Fibre Channel Host Bus Adapter	AJ763B
HP FC2142SR 4Gb 1-port PCIe Fibre Channel Host Bus Adapter	A8002B
HP FC2242SR 4Gb 2-port PCIe Fibre Channel Host Bus Adapter	A8003B
HP SN1000E 16Gb 2-port PCIe Fibre Channel Host Bus Adapter	QR559A
HP SN1000E 16Gb 1-port PCIe Fibre Channel Host Bus Adapter	QR558A

QLogic Fibre Channel HBAs

HP 81Q 8Gb 1-port PCIe Fibre Channel Host Bus Adapter	AK344A
HP 82Q 8Gb 2-port PCIe Fibre Channel Host Bus Adapter	AJ764A
HP FC1142SR 4Gb 1-port PCIe Fibre Channel Host Bus Adapter	AE311A
HP FC1242SR 4Gb 2-port PCIe Fibre Channel Host Bus Adapter	AE312A

Converged Network Adapter

HP CN1100E Dual Port Converged Network Adapter	BK835A
HP CN1000Q Dual Port Converged Network Adapter	BS668A
HP CN1000E Dual Port Converged Network Adapter	AW520B

HP Disk Storage Systems

Disk Enclosures

HP D2600 Disk Enclosure	AJ940A
HP D2700 Disk Enclosure	AJ941A

NOTE: Please see the QuickSpecs for additional options and configuration information at: http://h18000.www1.hp.com/products/quickspecs/13404_div/13404_div.html (Worldwide)

HP Uninterruptible Power Systems

HP Rack-mountable UPS

HP R1500 G3 Uninterruptible Power Supply (UPS)

HP R1.5kVA G3 1U NA Uninterruptible Power System	AF469A
HP R1.5kVA G3 1U JP/TW Uninterruptible Power System	AF470A
HP R1.5kVA G3 1U INTL Uninterruptible Power System	AF471A

NOTE: Please see the QuickSpecs for additional information: http://h18000.www1.hp.com/products/quickspecs/14059_div/14059_div.html (Worldwide)

Additional Options

HP R/T3000 G2 Uninterruptible Power System (UPS)

HP R/T3000 G2 2U L530 Low Voltage NA/JP Uninterruptible Power System	AF466A
HP R/T3000 G2 2U L620 High Voltage NA/JP Uninterruptible Power System	AF467A
HP R/T3000 G2 2U Detachable Cord High Voltage INTL Uninterruptible Power System	AF468A

NOTE: Please see the QuickSpecs for additional information:
http://h18000.www1.hp.com/products/quickspecs/14058_div/14058_div.html (Worldwide)

R5000 Uninterruptible Power System (UPS)

HP R5KVA 3U IEC309-32A High Voltage INTL Uninterruptible Power System	AF461A
HP R5KVA 3U L630 High Voltage NA/JP Uninterruptible Power System	AF460A

NOTE: Please see the QuickSpecs for additional information:
http://h18000.www1.hp.com/products/quickspecs/14109_div/14109_div.html (Worldwide)

R7000 Uninterruptible Power System (UPS)

HP R7KVA 4U 50A High Voltage NA/JP Uninterruptible Power System	AF462A
HP R7KVA 4U IEC-32A High Voltage INTL Uninterruptible Power System	AF463A
HP R5KVA and R7KVA 3U Extended Runtime Module	AF464A

NOTE: Please see the QuickSpecs for additional information:
http://h18000.www1.hp.com/products/quickspecs/14110_div/14110_div.html (Worldwide)

HP R8000/3

HP R8000/3 8000kVA Three Phase NA 6U Rackmount Uninterruptible Power System	AF431A
HP R8000/3 8000kVA Three Phase INTL 6U Rackmount Uninterruptible Power System	AF432A

HP R12000/3

HP R12000/3 12000VA Three Phase NA 6U Rackmount Uninterruptible Power System	AF429A
HP R12000/3 12000VA Three Phase INTL 6U Rackmount Uninterruptible Power System	AF430A

NOTE: Please see the QuickSpecs for additional information:
http://h18000.www1.hp.com/products/quickspecs/12857_div/12857_div.html (Worldwide)

NOTE: For additional information on HP Uninterruptible Power Systems please go to: www.hp.com/servers/rackups.
NOTE: For additional information on sizing your server, please reference: http://www.upssizer.com.

NOTE: Please see the UPS and PDU cable matrix's on the HP Power Protection and Management page. Under Power Cords, click on the "HP Power Cord Matrix" link. That link will list cable descriptions, requirements, and specifications for UPS and PDU units. Please see the following link: www.hp.com/products/powercords.

Additional Options

HP Power Distribution Units	**HP Monitored Power Distribution Unit: Half Rack Version**	
	HP 4.9kVA 24A Single Input Single Phase NA/JP Monitored Power Distribution Unit	AF914A
	HP 7.3kVA 32A Single Input Single Phase INTL Monitored Power Distribution Unit	AF915A
	HP Monitored Power Distribution Unit: Full Rack Version	
	HP 8.6kVA 24A Single Input Three Phase NA/JP Monitored Power Distribution Unit	AF504A
	HP 8.3kVA 40A Single Input Single Phase NA/JP Monitored Power Distribution Unit	AF506A
	HP 11kVA 16A Single Input Three Phase INTL Monitored Power Distribution Unit	AF508A
	HP 7.3kVA 32A Single Input Single Phase INTL Monitored Power Distribution Unit	AF510A
	NOTE: Please see the following QuickSpecs for additional information: http://h18000.www1.hp.com/products/quickspecs/12118_div/12118_div.html (Worldwide)	
	Modular Power Distribution Units 1U/0U (Up to 32 outlets)	
	NOTE: 1U/0U mounting brackets shipped with the unit (optimized for 10000 and 9000 series racks).	
	HP 4.9kVA 24A High Voltage NA/JP Modular Power Distribution Unit	252663-D72
	HP 8.3kVA 40A High Voltage NA/JP Modular Power Distribution Unit	252663-D73
	HP 7.3kVA 32A High Voltage INTL Modular Power Distribution Unit	252663-B31
	HP 3.6kVA 16A High Voltage INTL Modular Power Distribution Unit	252663-B24
	NOTE: This PDU has a detachable input power cord and allows for adaptability to country specific power requirements.	
	NOTE: Please see the following QuickSpecs for additional options including shorter jumper cables and country specific power cords: http://h18000.www1.hp.com/products/quickspecs/11041_div/11041_div.html (Worldwide)	
	NOTE: For additional information on HP Power Distribution Units including accessories please go to: www.hp.com/go/pdu.	
	NOTE: Please see the UPS and PDU cable matrix's on the HP Power Protection and Management page. Under Power Cords, click on the "HP Power Cord Matrix" link. That link will list cable descriptions, requirements, and specifications for UPS and PDU units. Please see the following link: www.hp.com/products/powercords.	

Additional Options

HP Intelligent Power Distribution Units (iPDU)	**iPDU Core Units**	
	HP 4.9kVA 24A Single Phase NA/JP Core Intelligent Modular Power Distribution Unit	AF520A
	HP 8.3kVA 40A Single Phase NA/JP Core Intelligent Modular Power Distribution Unit	AF521A
	HP 8.6kVA 24A Three Phase NA/JP Core Intelligent Modular Power Distribution Unit	AF522A
	HP 14.4kVA 40A Three Phase NA/JP Intelligent Modular Power Distribution Unit	AF533A
	HP 17.3kVA 48A Three Phase NA/JP Core Intelligent Modular Power Distribution Unit	AF523A
	HP 7.3kVA 32A Single Phase INTL Core Intelligent Modular Power Distribution Unit	AF525A
	HP 11kVA 16A Three Phase INTL Core Intelligent Modular Power Distribution Unit	AF526A
	HP 22kVA 32A Three Phase INTL Core Intelligent Modular Power Distribution Unit	AF527A
	HP 11.4kVA 16A 415V Three Phase L22-20 NA Core Intelligent Power Distribution Unit	AF900A
	HP 17.3kVA 24A 415V Three Phase L22-30 NA Core Intelligent Power Distribution Unit	AF902A
	HP 17.3kVA 24A 415V Three Phase IEC309 NA Core Intelligent Power Distribution Unit	AF901A
	HP 17.3kVA 48A 208V Three Phase 12 Outlet Core NA/JP Intelligent Power Distribution Unit	AF535A
	HP 17.3kVA 24A 415V Three Phase 12 Outlet Core NA/JP Intelligent Power Distribution Unit	AF537A
	HP 22kVA 32A 400V Three Phase 12 Outlet Core INTL Intelligent Power Distribution Unit	AF538A
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/13650_div/13650_div.html (Worldwide)	
HP Rack Options	**HP USB Keyboard and Mouse**	
	HP USB BFR with PVC Free INDIA Keyboard/Mouse Kit	672097-D63
	HP USB BFR with PVC Free AP-INTL Keyboard/Mouse Kit	672097-373
	HP USB BFR with PVC Free INTL Keyboard/Mouse Kit	672097-B33
	HP USB BFR with PVC Free PORT Keyboard/Mouse Kit	672097-133
	HP USB BFR with PVC Free TURK Keyboard/Mouse Kit	672097-143
	HP USB BFR with PVC Free CZ Keyboard/Mouse Kit	672097-223
	HP USB BFR with PVC Free FIN Keyboard/Mouse Kit	672097-353
	HP USB BFR with PVC Free SWE Keyboard/Mouse Kit	672097-103
	HP USB BFR with PVC Free SWIS Keyboard/Mouse Kit	672097-113
	HP USB BFR with PVC Free KOR Keyboard/Mouse Kit	672097-KD3
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/13972_div/13972_div.html (Worldwide)	
	HP Server Console Switches	
	HP Server Console 0x2x8 Port Analog Switch	AF616A
	HP Server Console 0x2x16 Port Analog Switch	AF617A

Additional Options

	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/11834_div/11834_div.html (Worldwide)	
	HP Server Console Switch G2 with Virtual Media & CAC	
	HP 0x2x16 KVM Server Console Switch G2 with Virtual Media CAC Software	AF618A
	HP 0x2x32 KVM Server Console Switch G2 with Virtual Media CAC Software	AF619A
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/13475_div/13475_div.html (Worldwide)	
	HP IP Console Switch G2 with Virtual Media & CAC	
	HP 1x1Ex8 KVM IP Console Switch G2 with Virtual Media CAC Software	AF620A
	HP 2x1Ex16 KVM IP Console Switch G2 with Virtual Media CAC Software	AF621A
	HP 4x1Ex32 KVM IP Console Switch G2 with Virtual Media CAC Software	AF622A
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/13474_div/13474_div.html (Worldwide)	
HP USB and SD Options	HP USB 04 Standard Keyboard	DT528A#ABA
	HP 4GB Secure Digital High Capacity Flash Media Kit **NOTE:** Blank SD media device is supported for use with VMware and Citrix. SD media must be installed in the internal slot of the ProLiant server. Learn more at: http://www.hp.com/go/proliantvirtualization.	580387-B21
	HP 2GB USB Flash Media Drive Key Kit **NOTE:** HP qualified blank USB key for use with HP ProLiant servers that support the VMware virtualization environment and other HP value-add software like SmartStart. HP recommends this industry standard USB flash device for use with VMware ESXi. USB device must be installed in the internal slot of the ProLiant server for use with VMware ESXi. Refer to HP VMware Getting Started Guide for installation instructions.	608447-B21

Additional Options

HP Care Pack Services	**Hardware Services On-site Service**	
	HP 3 year 4 hour 13x5 ProLiant DL58x Hardware Support	U4607E
	HP 3 year 4 hour 24x7 ProLiant D58x Hardware Support	U4608E
	6-Hour Call to Repair, On-site Service 7-Day x 24-Hour Coverage, 3 Years (U.S. Part Number)	
	HP 3 year 6 hour 24x7 Call to Repair ProLiant DL58x Hardware Support	U4609E
	Installation & Start-up Services	
	HP Install ProLiant DL58x Service	U4617E
	HP Startup ProLiant DL58x Service	U4618E
	HP Installation and Startup for Insight Control Server Deployment - previously Rapid Deployment Pack	U5683E
	Support Plus 24	
	HP 3 year Support Plus 24 Microsoft ProLiant DL58x Service	U4620E
	HP 3 year Support Plus 24 SuSE ProLiant DL58x Service	U6316E
	NOTE: For more information, customer/resellers can contact: http://www.hp.com/services/carepack	

NOTE: Memory configurations listed do not apply to "Factory Integrated Models".

HP ProLiant DL580 G7

Memory Subsystem Architecture

Intel® Xeon® processor E7 and 7500 series memory architecture is designed to take advantage of multiple stages of memory interleaving to reduce latency and increase bandwidth.

Each processor contains two Memory Controllers as shown in the Processor/Memory interconnect figure below. Each Memory controller has two Scalable Memory Interface (SMI) buses operating in lockstep where each SMI bus connects to a memory buffer. The purpose of the buffer is to convert SMI to DDR3. Each buffer has two DDR3 channels and can support up to four DIMMs for a total of eight DIMMs per cartridge.

- Memory speed is not affected by number of DIMMs or ranks. All DIMMs will run at the highest possible speed for a given processor.
- DDR3 memory speed is a function of the processors QPI bus speed such that
  - Processors with a QPI speed of 6.4GT will run memory at 1066MHz
  - Processors with a QPI speed of 5.6GT will run memory at 978MHz
  - Processors with a QPI speed of 4.8GT will run memory at 800 MHz

DIMM Installation guidelines

Each memory cartridge can support up to 8 DIMMs, for a system total of 64 DIMMs. When installing DIMM modules in the Memory Cartridge observe the following minimum guidelines:

- UDIMMs are not supported
- Minimum allowable configuration is two DIMMs per cartridge.
- DIMMs must be installed in pairs with identical characteristics. For configuration simplicity HP recommends using identical part numbered DIMMs throughout when possible.
- DIMM pairs MUST be populated in sequence by letter designation. Install DIMM pair 1A, 8A first followed by DIMM pair 3B, 6B then DIMM pair 2C, 7C and DIMM pair 4D, 5D last.
- Maximum performance is achieved by balancing DIMM pairs by letter groupings across all memory cartridges. Such that the 1A, 8A pair is install in all memory cartridges first (see diagram below) followed by the B pair, C pair and D pair.
- AMP modes Online Sparing and Memory Mirroring have further requirements beyond these listed here. Please refer to the user guide for additional memory configuration requirements.

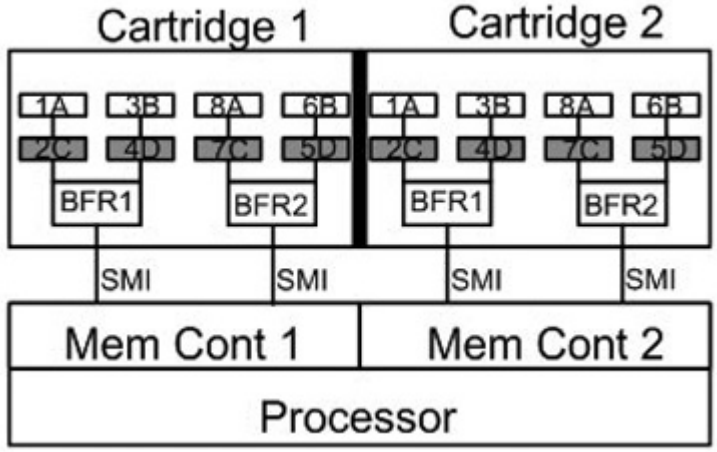


Figure 1 Processor/Memory interconnect

Illustration of how the processor, cartridges and DIMMs are electrically connected.

Memory

Memory Cartridge population guidelines

This server contains 8 memory cartridge slots in the processor memory drawer. Observe the following guidelines:

- Populate memory cartridge slots for a processor only if the processor is installed where:
  - Processor 1 connects to cartridge slots 1 and 2.
  - Processor 2 connects to cartridge slots 3 and 4.
  - Processor 3 connects to cartridge slots 5 and 6.
  - Processor 4 connects to cartridge slots 7 and 8.
- Minimum recommended cartridge population is one cartridge per processor. For best performance two cartridges per processor are recommended.
- Processors installed without corresponding memory cartridges will incur high memory access latencies and is not recommended.
- To maximize performance in multi-processor configurations distribute the total memory capacity evenly between all processors.

Hemisphere mode

The architecture incorporates hemisphere mode, a high performance interleaving technology. Hemisphere mode allows interleaving between the two processor memory controllers internal to each processor.

Hemisphere mode is enabled when all processors in a system have the memory behind both memory controllers populated identically.

- To enable each processor to enter hemisphere mode it must have both cartridges installed, populated with equal memory capacities and follow the DIMM installation guidelines.

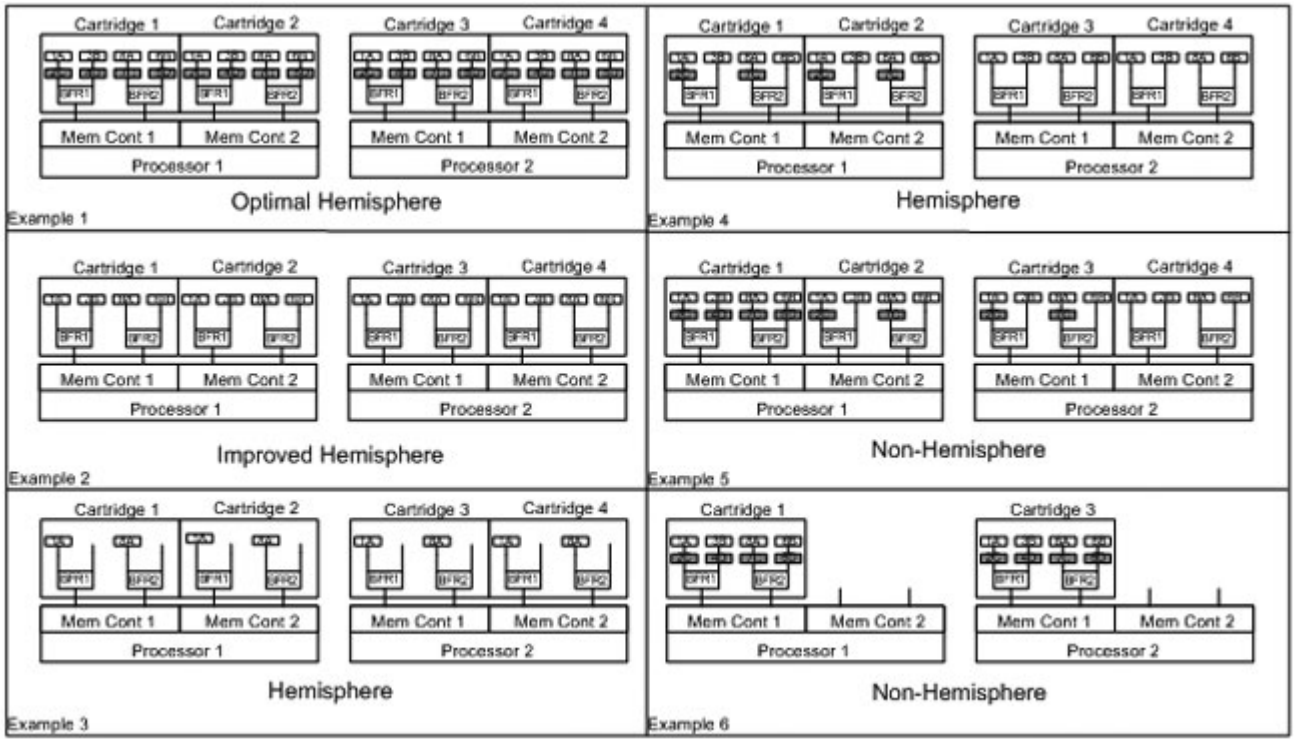


Figure 2 Hemisphere Population Diagram

Examples of Hemisphere vs Non-Hemisphere populations.

Memory Performance Optimization

The DL580 G7 supports 64 DIMMs across four multi-core processors. While there are many DIMM population configurations that can

Memory

support any desired total memory size, optimal performance can only be achieved when DIMMs are populated to take advantage of the architecture. Reference the Figure: Hemisphere Population Diagram to achieve the best performance for a given memory/processor configuration.

- The largest contributor to maximum memory bandwidth performance is to utilize both memory controllers inside the processor. This is achieved by populating both memory cartridges for each installed processor.
- The second largest contributor to performance is to populate each DDR3 channel in each memory cartridge. To achieve this, the minimum DIMM count per cartridge is four. Maximum bandwidth is reached by fully populating all memory cartridges with the maximum number of eight DIMMs per cartridge.
- Best performance is obtained when all installed processors are enabled for Hemisphere mode. HP recommends two memory boards per processor- each one with at least 4 DIMMs- for improved memory bandwidth
- Hemisphere mode is optimum when four or eight DIMMs are installed per cartridge. Hemisphere mode can be reached with two or six DIMMs per cartridge (2 cartridges per processor) but it is not optimal configuration for Hemisphere mode.
- Plan your memory configurations using Identical DIMMs to reach your memory size target taking into account that 32 and 64 DIMM count configurations result in the highest performance. For a 4 processor example:
  - If initial memory target is 64GB then populate a 4 processor system with eight cartridges of 4 - 2GB DIMMs each for a total of 32 DIMMs. Your maximum expansion target is 128GB with 64 2GB DIMMs.
  - For 4GB DIMMs your initial memory target is 128GB using 32 DIMMs. Your maximum expansion target is 256GB with 64 DIMMs.
  - For 8GB DIMMs your initial memory target is 256GB using 32 DIMMs. Your maximum expansion target is 512GB with 64 DIMMs.
  - Maximum system memory capability is reached with an initial memory target of 512GB with 32 - 16GBDIMMs and 2TB with 64 32GB DIMMs.
- The more ranks per DIMM the higher the performance such that Quad rank DIMMs perform better than dual rank DIMMs.

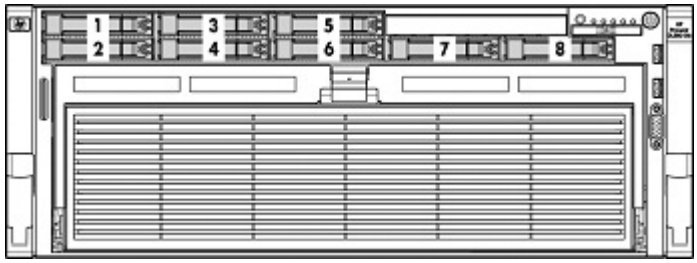
NOTE: Memory configurations listed do not apply to "Factory Integrated Models". Only registered (RDIMM) speeds of 1066 or 1333 running at 1066 are supported and must be installed in pairs. UDIMMs are not supported.

HP Memory	**Registered DIMMs (RDIMMs)**	
	HP 2GB (1x2GB) Dual Rank x8 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit **NOTE:** Only supported with the Intel® Xeon® Processor 7500 series processors	500656-B21
	HP 4GB (1x4GB) Dual Rank x4 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	500658-B21
	HP 4GB (1x4GB) Single Rank x4 PC3L-10600 (DDR3-1333) Registered CAS-9 Low Power Memory Kit	604504-B21
	HP 8GB (1x8GB) Dual Rank x4 PC3-10600 (DDR3-1333) Registered CAS-9 Memory Kit	500662-B21
	HP 8GB (1x8GB) Dual Rank x4 PC3L-10600 (DDR3-1333) Registered CAS-9 Low Power Memory Kit	604506-B21
	HP 16GB (1x16GB) Quad Rank x4 PC3-8500 (DDR3-1066) Registered CAS-7 Memory Kit	500666-B21
	HP 16GB (1x16GB) Dual Rank x4 PC3L-10600 (DDR3-1333) Registered CAS-9 LP Memory Kit	627812-B21
	HP 32GB (1x32GB) Quad Rank x4 PC3L-8500 (DDR3-1066) Registered CAS-7 LP Memory Kit	627814-B21
	NOTE: PC3L DIMMs are only supported with the Intel® Xeon® Processor E7 series processors and require (E7) memory cartridge. **NOTE:** PC3L is a low-voltage memory.	
	Memory Expansion Options	

Memory

HP DL580G7/DL980G7 (E7) Memory Cartridge **NOTE:** Four memory cartridges come standard in the HP ProLiant DL580 G7 (E7) Configure-to-order Server (643086-B21), each kit contains one cartridge and a maximum of (8) are supported in the server. See Memory Performance Optimization in the Memory section for configuration guidelines.	644172-B21
HP DL580G7/DL980G7 Memory Cartridge **NOTE:** Each kit contains one memory board and a maximum of (8) are supported in the server. See Memory Performance Optimization in the Memory section for configuration guidelines.	588141-B21

Storage



1-8 SFF SAS Internal Drive cage

Drive Support

	Quantity Supported	Position Supported	Controller
Optical Drives			
Slimline DVD-ROM drive	Up to 1	1	Integrated SATA
HP Slim SATA DVD RW Optical Drive	Up to 1	1	Integrated SATA

Hard Drives

NOTE: The components of a storage subsystem (e.g. the drive, the HBA/controller, firmware, and the server backplane) should operate at the same data transfer rate or the system bandwidth will be negotiated down to an acceptable level for all components.

NOTE: Hard drives have either a one year or three year warranty; refer to the specific hard drive QuickSpecs for details.

SAS Hot Plug SFF (2.5-inch) Enterprise (ENT) Drives

	Quantity Supported	Position Supported	Controller
900GB 6G SAS 10K 600GB 6G SAS 10K 450GB 6G SAS 10K 300GB 6G SAS 10K 300GB 6G SAS 15K 146GB 6G SAS 15K	Up to 8	1-8	HP Smart Array P212/Zero Memory Controller HP Smart Array P212/256 MB Controller HP Smart Array P410/256 MB Controller HP Smart Array P410/512 MB BBWC Controller HP Smart Array P410/512 MB FBWC Controller HP Smart Array P410/1G FBWC Controller HP Smart Array P411/256MB Controller HP Smart Array P411/512MB with BBWC Controller HP Smart Array P411/512MB Flash Backed Write Cache HP Smart Array P411/1G Flash Backed Write Cache HP Smart Array P812/1G Flash Backed Cache Controller

SAS Hot Plug SFF (2.5-inch) Midline (MDL) Drives

	Quantity Supported	Position Supported	Controller
1TB 6G SAS 7.2K 500GB 6G SAS 7.2K	Up to 8	1-8	HP Smart Array P212/Zero Memory Controller HP Smart Array P212/256 MB Controller

			HP Smart Array P410/256 MB Controller HP Smart Array P410/512 MB BBWC Controller HP Smart Array P410/512 MB FBWC Controller HP Smart Array P410/1G FBWC Controller HP Smart Array P411/256MB Controller HP Smart Array P411/512MB with BBWC Controller HP Smart Array P411/512MB Flash Backed Write Cache HP Smart Array P411/1G Flash Backed Write Cache HP Smart Array P812/1G Flash Backed Cache Controller

SATA Hot Plug SFF (2.5-inch) Midline (MDL) Drives

	Quantity Supported	Position Supported	Controller
1TB 3G SATA 7.2K 500GB 3G SATA 7.2K	Up to 8	1-8	HP Smart Array P212/Zero Memory Controller HP Smart Array P212/256 MB Controller HP Smart Array P410/256 MB Controller HP Smart Array P410/512 MB BBWC Controller HP Smart Array P410/512 MB FBWC Controller HP Smart Array P410/1G FBWC Controller HP Smart Array P411/256MB Controller HP Smart Array P411/512MB with BBWC Controller HP Smart Array P411/512MB Flash Backed Write Cache HP Smart Array P411/1G Flash Backed Write Cache HP Smart Array P812/1G Flash Backed Cache Controller

SATA Hot Plug 2.5" Enterprise Mainstream Solid State Drives

	Quantity Supported	Position Supported	Controller
400GB 3.0G SATA SSD 200GB 3.0G SATA SSD 100GB 3.0G SATA SSD	Up to 8	1-8	HP Smart Array P212/Zero Memory Controller HP Smart Array P212/256 MB Controller HP Smart Array P410/256 MB Controller HP Smart Array P410/512 MB BBWC Controller HP Smart Array P410/512 MB FBWC Controller HP Smart Array P410/1G FBWC Controller HP Smart Array P411/256MB Controller HP Smart Array P411/512MB with BBWC Controller HP Smart Array P411/512MB Flash Backed Write Cache HP Smart Array P411/1G Flash Backed Write Cache HP Smart Array P812/1G Flash Backed Cache Controller

6G SAS Hot Plug Enterprise Mainstream Solid State Drives

	Quantity Supported	Position Supported	Controller
800GB 6G SAS MLC SFF 400GB 6G SAS MLC SFF	Up to 8	1-8	HP Smart Array P212/Zero Memory Controller HP Smart Array P212/256 MB Controller HP Smart Array P410/256 MB Controller HP Smart Array P410/512 MB BBWC Controller

HP Smart Array P410/512 MB FBWC Controller
HP Smart Array P410/1G FBWC Controller
HP Smart Array P411/256MB Controller
HP Smart Array P411/512MB with BBWC Controller
HP Smart Array P411/512MB Flash Backed Write Cache
HP Smart Array P411/1G Flash Backed Write Cache
HP Smart Array P812/1G Flash Backed Cache Controller

6G SAS Hot Plug Enterprise Performance Solid State Drives

	Quantity Supported	Position Supported	Controller
400GB 6G SAS SLC SFF 200GB 6G SAS SLC SFF	Up to 8	1-8	HP Smart Array P212/Zero Memory Controller HP Smart Array P212/256 MB Controller HP Smart Array P410/256 MB Controller HP Smart Array P410/512 MB BBWC Controller HP Smart Array P410/512 MB FBWC Controller HP Smart Array P410/1G FBWC Controller HP Smart Array P411/256MB Controller HP Smart Array P411/512MB with BBWC Controller HP Smart Array P411/512MB Flash Backed Write Cache HP Smart Array P411/1G Flash Backed Write Cache HP Smart Array P812/1G Flash Backed Cache Controller

External Storage

	Quantity Supported	Position Supported	Host Controller or Adapter
D2600 Disk Enclosure	Up to 8	External	HP Smart Array P411/256MB BBWC Controller HP Smart Array P411/512 MB BBWC Controller HP Smart Array P812/1G Flash Backed Cache Controller
D2700 Disk Enclosure	Up to 4	External	HP Smart Array P411/256 MB Controller HP Smart Array P411/512 MB BBWC Controller HP Smart Array P812/1G Flash Backed Cache Controller

Maximum Storage Capacity - (External SAS Enclosure Attached)

Internal	8.0TB (8 x 1TB SFF SAS/SATA Drives)
External	960TB (80 MSA60 enclosures x 12 drive bays each x 1TB SATA Drives)

Tape and Disk-Based Backup

NOTE: For the complete range of tape drives, autoloaders, libraries and media, including the internal fitting models, see: http://www.hp.com/go/tape. For the complete range of D2D Backup Systems see: http://www.hp.com/go/d2d. For the complete range of RDX drives and media see: http://www.hp.com/go/rdx. For hardware and software compatibility of HP disk and tape backup products see: http://www.hp.com/storage/SPOCK.

Position	Recommended Controller	Controller Part Number

Storage

HP SCSI Tape Drives LTO-1 Ultrium 232 LTO-2 Ultrium 448 LTO-3 Ultrium 920 LTO-3 Ultrium 960 LTO4 Ultrium 1760 LTO-4 Ultrium 1840 DAT 40 DAT 72 DAT 160 1U Rack-Mount Kit 3U Rack-Mount Kit	External	HP SC11Xe Ultra320 Single Channel/ PCIe x4 SCSI Host Bus Adapter	412911-B21
HP USB Tape Drives DAT 40 DAT 72 DAT 160 DAT 320 1U USB Rack-Mount Kit	External	USB 2.0 Port	N/A
HP SAS Tape Drives DAT 160 DAT 320 LTO-2 Ultrium 448 LTO-3 Ultrium 920 LTO-4 Ultrium 1760 LTO-4 Ultrium 1840 LTO-5 Ultrium 3000 LTO-5 Ultrium 3280 1U Rack-Mount Kit 3U Rack-Mount Kit	External	HP Smart Array P212/ZM 1-ports Int/1-ports Ext PCIe x8 SAS Controller	462828-B21
HP SCSI Tape Autoloaders DAT 72x10 Autoloader 1/8 G2 Autoloader	External	HP SC11Xe Ultra320 Single Channel/ PCIe x4 SCSI Host Bus Adapter	412911-B21
HP SCSI Tape Libraries, External MSL2024 MSL4048 MSL8096 MSL6000	External	HP U320e SCSI Dual Channel Host Bus Adapter	AH627A
HP SAS Tape Autoloaders and Libraries 1/8 G2 Autoloader MSL2024 MSL4048 MSL8096	External	HP Smart Array P212/ZM 1-ports Int/1-ports Ext PCIe x8 SAS Controller	462828-B21

Storage

HP Fibre Channel Tape Libraries MSL2024 MSL4048 MSL8096 MSL6000	External	Please consult the EBS connectivity matrix at: http://www.hp.com/go/ebs for connectivity information and the supported Fibre Channel HBAs shown in this QuickSpec.	
HP USB RDX Removable Disk Backup System RDX160 RDX320 RDX500 RDX750 RDX1TB	External	USB 2.0 port	N/A
HP D2D Backup Systems, iSCSI D2D2500i D2D4000i	External	Embedded Network Controller. If the server requires a hardware iSCSI initiator, the QLogic QLA4050 Host Bus Adapter is recommended.	
HP D2D Backup Systems, Fibre Channel D2D4000fc	External	Direct server attach is not supported, requires connection via SAN fabric. See: http://www.hp.com/storage/SPOCK	

Power Specifications

HP 1200W Common Slot Silver Hot Plug Power Supply Kit							
Part Number	500172-B21						
Input Voltage Range (V rms)	100 to 240						
Frequency Range (Nominal) (Hz)	50/60						
Nominal Input Voltage (Vrms)	**100**	**120**	**200**	**208**	**220**	**230**	**240**
Maximum Rated Output Wattage Rating	800	900	1200	1200	1200	1200	1200
Nominal Input Current (A rms)	9.7	9.0	7.0	6.8	6.4	6.1	5.9
Maximum Rated Input Wattage Rating (Watts)	930	1034	1348	1348	1348	1348	1348
Maximum Rated VA (Volt-Amp)	970	1079	1406	1406	1406	1406	1406
Efficiency (%)	86	86	89	89	89	89	89
Power Factor	0.97						
Leakage Current (mA)	0.42	0.50	0.83	0.87	0.92	0.96	1.00
Maximum Inrush Current (A peak)	30						
Maximum Inrush Current duration (mS)	20						
Maximum British Thermal Unit Rating (BTU-Hr)	3174	3530	4600	4600	4600	4600	4600

HP 1200W Common Slot Platinum Hot Plug Power Supply Kit							
Part Number	578322-B21						
Input Voltage Range (V rms)	100 to 240						
Frequency Range (Nominal) (Hz)	50/60						
Nominal Input Voltage (Vrms)	**100**	**120**	**200**	**208**	**220**	**230**	**240**
Maximum Rated Output Wattage Rating	800	900	1200	1200	1200	1200	1200
Nominal Input Current (A rms)	9.3	8.6	6.7	6.5	6.1	5.8	5.6
Maximum Rated Input Wattage Rating (Watts)	889	989	1290	1290	1290	1290	1290
Maximum Rated VA (Volt-Amp)	927	1031	1345	1345	1345	1345	1345
Efficiency (%)	90	91	93	93	93	93	93
Power Factor	0.97						
Leakage Current (mA)	0.42	0.50	0.83	0.87	0.92	0.96	1.00
Maximum Inrush Current (A peak)	30						
Maximum Inrush Current duration (mS)	20						
Maximum British Thermal Unit Rating (BTU-Hr)	3033	3375	4403	4403	4403	4403	4403

NOTE: To review typical system power ratings use the HP Power Advisor which is available online located at url: www.hp.com/go/proliant-energy-efficient or www.hp.com/go/hppoweradvisor

Technical Specifications

System Unit	**Dimensions** (H x W x D) (with bezel)	6.94" x 19.0" x 27.55" (17.6cm x 48.3cm x 70.0cm)	
	Weight (approximate)	Maximum (all hard drives, power supplies, DIMMs and processors installed)	100.0 lb (45.4 kg)
		Minimum (one hard drive, two power supplies, four DIMMs, and two processors installed)	66.0 lb (30.0 kg)
	Input Requirements (per power supply)	Rated Line Voltage	100 - 127 VAC, 200 - 240 VAC
		Rated Input Current	12 A (at 100 VAC), 8 A (at 200 VAC)
		Rated Input Frequency	50 to 60 Hz
		Rated Input Power	1161 W (at 100 VAC), 1598 W (at 240 VAC)
	BTU Rating	Maximum	3960 BTU/hr (at 100 VAC), 5450 BTU/hr (at 200 VAC)
	Power Specifications	**NOTE:** To review typical system power ratings use the HP Power Advisor which is available online located at url: www.hp.com/go/proliant-energy-efficient or www.hp.com/go/hppoweradvisor - Click on the system of interest. Example: DL580 G7 - Follow the instructions of the next screens.	
	Power Supply Output (per power supply)	Rated Steady-State Power	910 W (low line), 1300 W (high line)
		Maximum Peak Power	910 W (low line), 1300 W (high line)
	System Inlet Temperature	Operating	10° to 35°C (50° to 95°F) at sea level with an altitude derating of 1.0°C per every 304.8 m (1.8°F per every 1000 ft) above sea level to a maximum of 3048 m (10,000 ft), no direct sustained sunlight. Maximum rate of change is 10°C/hr (18°F/hr). The upper limit may be limited by the type and number of options installed. System performance may be reduced if operating with a fan fault or above 30°C (86°F).
		Non-operating	-30° to 60°C (-22° to 140°F). Maximum rate of change is 20°C/hr (36°F/hr).
	Relative Humidity (non-condensing)	Operating	10 to 90% relative humidity (Rh), 28°C (82.4°F) maximum wet bulb temperature, non-condensing.
		Non-operating	5 to 95% relative humidity (Rh), 38.7°C (101.7°F) maximum wet bulb temperature, non-condensing.
	Altitude	Operating	3048 m (10,000 ft). This value may be limited by

			the type and number of options installed. Maximum allowable altitude change rate is 457 m/min (1500 ft/min).
		Non-operating	9144 m (30,000 ft). Maximum allowable altitude change rate is 457 m/min (1500 ft/min).
	Acoustic Noise	Listed are the declared A-Weighted sound power levels (LWAd) and declared average bystander position A-Weighted sound pressure levels (LpAm) when the product is operating in a 23°C ambient environment. Noise emissions were measured in accordance with ISO 7779 (ECMA 74) and declared in accordance with ISO 9296 (ECMA 109).	
		Idle	
		L WAd	6.4 B (with PCI-E)
		L pAm	NA dBA
		Operating	
		L WAd	6.8 B (with PCI-E)
		L pAm	NA dBA
	Emissions Classification (EMC)	**FCC Rating**	Class A
		Normative Standards	CISPR 22; EN55022; EN55024; FCC CFR 47, Pt 15; ICES-003; CNS13438; GB9254; K22;K24; EN 61000-3-2; EN 61000-3-3; EN 60950-1; IEC 60950-1
		NOTE: Product conformance to cited product specifications is based on sample (type) testing, evaluation, or assessment. This product or family of products is eligible to bear the appropriate compliance logos and statements.	

Integrated Lights-Out 3 (iLO 3) integrated on system board	**Architecture**	PCI Express based health and remote management ASIC
	Processor	PCI Express RISC processor core running at 250MHz
	Upgradeability	Option firmware upgradeable via Flash ROM.
	Interfaces	One Ethernet Sideband connection (10/100/1000 Mb/s)
		One Ethernet network connection (10/100Mb/s)
	Memory	128-MB RAM with ECC
	Operating System Support	Microsoft Windows 2008 R2
		Microsoft Windows 2008 (32 bit and 64 bit)
		Microsoft Windows Server 2008 Standard Edition (32bit and 64bit)
		Microsoft Windows Server 2008 Enterprise Edition (32bit and 64bit)
		Microsoft Windows Server 2003 and Windows Server 2003 R2, and Windows Server 2003 for Extended Systems Standard Edition, Enterprise Edition
		Red Hat Enterprise Linux 5.4 (32 bit and 64 bit)
		SUSE LINUX Enterprise Server 11 (32bit and 64bit)
		SUSE LINUX Enterprise Server 10 (32bit and 64bit)
		VMware ESX 4.0
		VMware ESX 3.5.0
		Solaris

Technical Specifications

	Client System Support	Microsoft Windows 7
		Microsoft Windows XP Professional Edition
		Microsoft Windows Vista Business and Ultimate Editions
		Red Hat Enterprise Desktop 5.00
		SUSE Linux Enterprise Desktop 11
		SUSE Linux Enterprise Desktop 10
	Client Browser Support	Microsoft Internet Explorer 8
		Microsoft Internet Explorer 7
		Microsoft Internet Explorer 6
		Firefox 3.5 (on supported Windows and Linux systems)
		Firefox 3.0 (on supported Windows and Linux systems)
	Command Line Support	Secure Shell and serial port access
		Secure Socket Layer
		Secure Shell version 2
	Security	Advanced Encryption Standard (AES) and Triple Data Encryption Standard (3DES) on browser, CLP and XML scripting interface
		AES encryption of video
		RC4 encryption of video
	Directory Support Services	Active Directory v1.0 (Windows 2003)
	Driver Support	HP ProLiant iLO3 Management Controller Driver Package
	Management protocols supported	SNMP, IPMI 2.0 (system and LAN interface), DMTF Systems Management Architecture for Server Hardware Command Line Protocol (SMASH CLP), HP RIBCL XML
Smart Array P410i Controller	**Dimensions**	Embedded
	Disk Drive and Enclosure Interface - Transfer rate	6Gb/s SAS (Serial Attached SCSI) 3Gb/s SATA (Serial ATA)
	SAS Connectors	2 internal 4X connectors
	Cache Memory Speed	DDR2-800MHz with 40 or 72-bit wide bus
	Server Interface	x4 PCIe 2.0 provides 2GB/s maximum bandwidth
	SAS Speed	8 6Gb/s SAS links provide 4.8GB/s maximum bandwidth
	Cache Memory	Zero Memory RAID has no cache memory 40-bit 256MB ECC protected cache (battery upgrade available) 72-bit 512MB BBWC or 72-bit 512MB and 1G FBWC
	Logical Drives Supported	Zero Memory, Up to 2 logical volumes (8 physical drives) Up to 64 logical drives with cache
	Host Memory Addressing	64-bit, supporting greater than 4GB server memory space
	RAID Support	RAID 6, 6+0 (Advanced Data Guarding) **NOTE:** RAID 6, 6+0 can be enabled with one of the following combinations: • 256 MB cache, Battery kit and Smart Array Advanced Pack License key option upgrades

		• 512 MB BBWC/FBWC and Smart Array Advanced Pack License key option upgrades • 1G FBWC and Smart Array Advanced Pack License key option upgrades RAID 5, 5+0 (Distributed Data Guarding) **NOTE:** A minimum or 256 MB cache is required to enable RAID 5, 5+0 support RAID 1+0 (Striping & Mirroring) RAID 0 (Striping), RAID 1 (Mirroring)	
HP NC375i Integrated Quad Port Gigabit Server Adapter	**Network Interface**	10Base-T/100Base-TX/1000Base-TX	
	Compatibility	IEEE 802.3 10Base-T IEEE 802.3ab 1000Base-T IEEE 802.3u 100Base-TX IEEE 802.3ad 1000Base-TX IEEE 802.1p 100Base-TX IEEE 802.1q 100Base-TX	
	Data Transfer Method	PCI-Express 2.0 x8	
	Controller	Qlogic/NetXen NX3031	
	Network Transfer Rate	10Base-T (Full-Duplex)	20 Mb/s
		100Base-TX (Full-Duplex)	200 Mb/s
		1000Base-TX (Full-Duplex)	2000 Mb/s
	Connector	RJ-45	
	Cable Support	10Base-T	Categories 3, 4, or 5 UTP; up to 328 ft (100 m)
		100Base-TX	Category 5 or higher UTP; up to 328 ft (100 m)
		1000Base-TX	Category 5 or higher UTP; up to 328 ft (100 m)
Environment-friendly Products and Approach	**End-of-life Management and Recycling**	Hewlett-Packard offers end-of-life HP product return, trade-in, and recycling programs in many geographic areas. For trade-in information, please go to: http://www.hp.com/go/green. To recycle your product, please go to: http://www.hp.com/go/green or contact your nearest HP sales office. Products returned to HP will be recycled, recovered or disposed of in a responsible manner. The EU WEEE directive (2002/95/EC) requires manufacturers to provide treatment information for each product type for use by treatment facilities. This information (product disassembly instructions) is posted on the Hewlett Packard web site at: http://www.hp.com/go/green. These instructions may be used by recyclers and other WEEE treatment facilities as well as HP OEM customers who integrate and re-sell HP equipment.	

Technical Specifications

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For hard drives, 1GB = 1 billion bytes. Actual formatted capacity is less.